This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.058 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260 *et seq.*

1.	Facility Name and Mailing Address:	Waterford Wastewater Treatment Plant P. O. Box 4000 Ashburn, VA 20146	SIC Code :	4952 WWTP
	Facility Location:	40024 Old Wheatland Road Waterford, VA 20197	County:	Loudoun
	Facility Contact Name:	Frank Stokes	Telephone Number:	571-291-7834
	Facility E-mail Address:	fstokes@loudounwater.org		
2.	Permit No.:	VA0060500	Expiration Date of previous permit:	December 21, 2013
	Other VPDES Permits associated with this facility:		None	
	Other Permits associated with this facility:		None	
	E2/E3/E4 Status:	NA		
3.	Owner Name:	Loudoun County Sanitation Authority		
	Owner Contact/Title:	Fred Jennings / General Manager	Telephone Number:	571-291-7700
	Owner E-mail Address:	fjennings@loudounwater.org		
4.	Application Complete Date:	June 12, 2013		
	Permit Drafted By:	Joan C. Crowther	Date Drafted:	11/25/13
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	12/2/13
	WPM Review By:	Bryant Thomas	Date Reviewed:	12/11/13
	Public Comment Period :	Start Date: January 8, 2014	End Date:	February 7, 2014

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination

Receiving Stream Name :	South Fork Catoctin Creek	Stream Code:	1aSOC
Drainage Area at Outfall:	31.98 sq.mi.	River Mile:	1.59
Stream Basin:	Potomac River	Subbasin:	Potomac River
Section:	10b	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-A02R
7Q10 Flow:	0.14 MGD	7Q10 High Flow:	1.6 MGD (Dec-May)
1Q10 Flow:	0.12 MGD	1Q10 High Flow:	1.1 MGD (Dec-May)
30Q10 Flow:	0.28 MGD	30Q10 High Flow:	2.8 MGD (Dec-May)
Harmonic Mean Flow:	2.5 MGD	30Q5 Flow:	0.65 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

✓	State Water Control Law		EPA Guidelines
✓	Clean Water Act	✓	Water Quality Standards
✓	VPDES Permit Regulation		Other
✓	EPA NPDES Regulation		

7. Licensed Operator Requirements: Class III

8. Reliability Class: Class II

9. Permit Characterization:

	Private	✓	Effluent Limited		Possible Interstate Effect
	Federal	✓	Water Quality Limited		Compliance Schedule Required
	State		Whole Effluent Toxicity Program Required		Interim Limits in Permit
✓	POTW		Pretreatment Program Required		Interim Limits in Other Document
✓	TMDL	✓	e-DMR Participant		

10. Wastewater Sources and Treatment Description:

The Waterford Wastewater Treatment Plant (WWTP) is an enhanced aerated lagoon facility designed to treat an average of 58,000 GPD, but normally treats about 18,000 GPD; discharge is intermittent, with up to 28-32 discharge events per year on a weekly basis. Each weekly discharge event typically averages about 42,000 GDP. Discharge during the winter is limited to occasional events to maintain pond level. Treatment consists of the following stages: aerated lagoon, secondary clarification enhanced with aluminum sulfate and polymer addition, tablet chlorination and dechlorination, and post aeration. The facility serves a population of about 275 people.

Influent Sewage
The wastewater enters the facility by gravity sewer discharging to an influent sewage pump station. The station contains two submersible sewage pumps that discharge through a 4-inch force main to Distribution Box (D-Box) A. The wastewater flows from D-Box A by 8-inch gravity sewer to the aerated lagoons.

Aerated Lagoons
There are two aerated lagoons, normally operating in series, to provide the initial stage of secondary treatment. Wastewater enters one end of Lagoon 1 from D-Box A. Lagoon 1 provides about 8.25 days of detention for treatment at design flow. At the opposite end of lagoon 1 is an 8-inch outlet that allows the wastewater to flow by gravity, through D-Box B to Lagoon 2. Lagoon 2 provides another 8.25 days of detention to complete biological treatment. Each lagoon has a normal water surface of 194 feet by 120 feet at a depth of 10 feet. The lagoons have sloped sides, and the earthen bottom and sides are sealed with bentonite clay. Aeration is provided by air diffusion through a grid of ½-inch, slotted, polyethylene tubing laid in rows across the lagoon bottom and fed by a 4-inch PVC header. Air is supplied by two, positive displacement blowers.

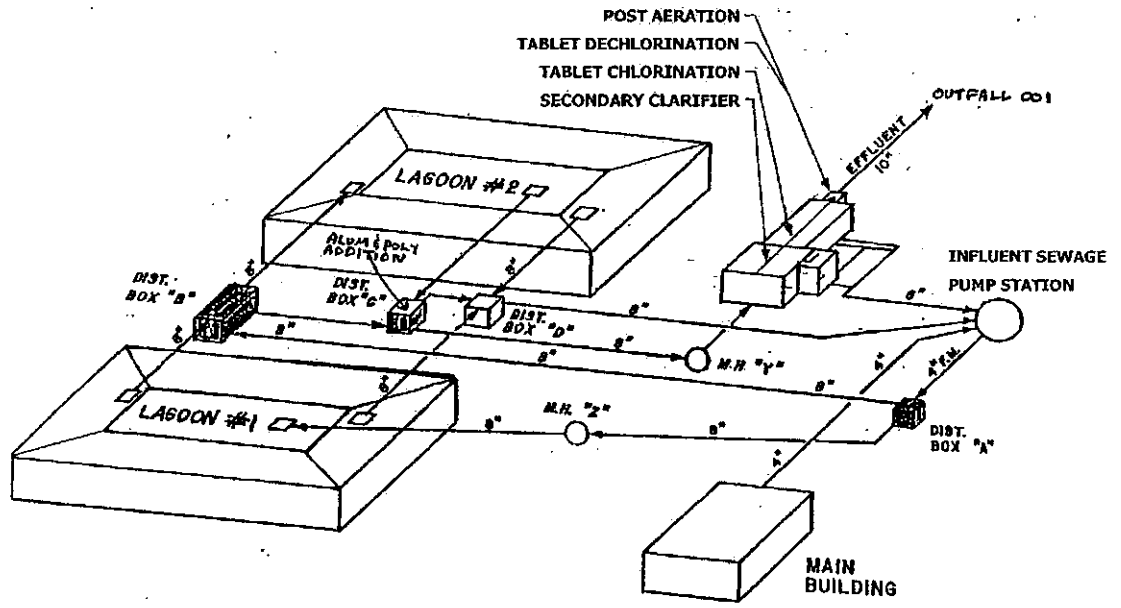
Secondary Clarifiers and Chemical Addition
After biological treatment the wastewater exits Lagoon 2 through an 8-inch-line and flows by gravity to D-Box C. Aluminum sulfate (alum) and polymer is added at this point in the process and the wastewater continues its flow by gravity to the two secondary clarifiers. The incoming flow is split between the clarifiers and any solids escaping from the lagoons are settled out to complete secondary treatment. Each clarifier is 10-foot by 10-foot square with a hopper bottom and provides about 4.2 hours of detention at design flow. Solids that settle to the hopper bottoms are drained off periodically to the influent pump station.

Chlorination/Dechlorination/Post- Aeration
After pond treatment and clarification, the wastewater is disinfected in the two chlorine contact tanks. Disinfection is achieved using a 4-tube, tablet feed system that allows calcium hypochlorite tablets to dissolve into the waste stream as it flows through the feeder. The tanks are fitted with over/under baffles to prevent short circuiting. Each tank has a volume of 2100 gallons and provides about 50 minutes of detention time at design flow.

Following the chlorine contact tank is a post aeration and dechlorination tank. Water leaving the chlorine contact tank passes through a 4-tube tablet feeder that provides a dose of sodium bi-sulfite to de-chlorinate the wastewater prior to discharge. When a discharge event is initiated the post aeration air diffuser in the tank is manually turned on. Sampling is conducted after the dechlorination chamber as the flow enters the outfall line.

After all treatment, flow is discharged from the plant through a 10-inch diameter pipe (Outfall 001) into the South Fork of Catoctin Creek using a shore-based headwall with a backwater flap valve.

Waterford Wastewater Treatment Plant Schematic/Diagram:

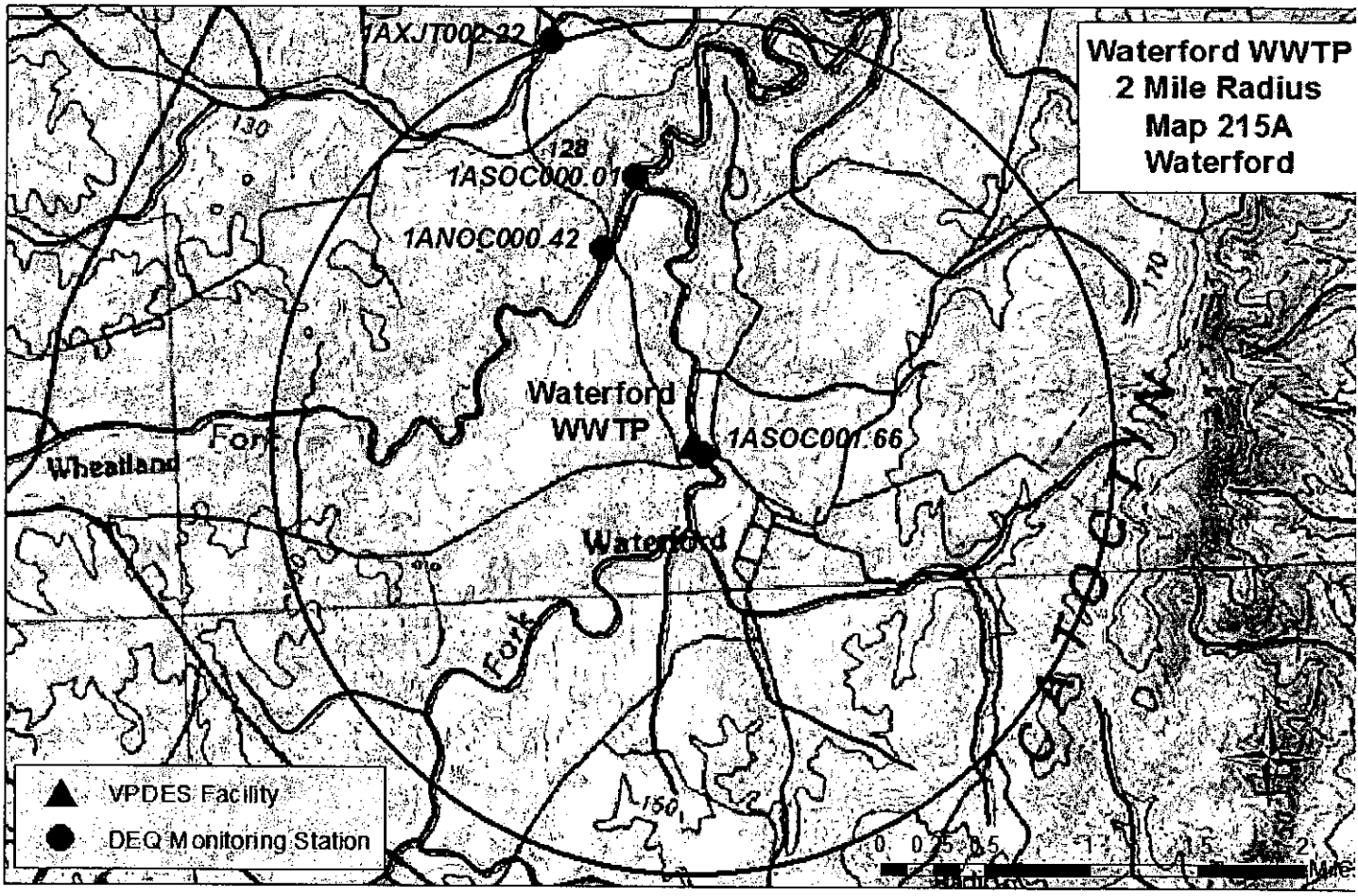


WATERFORD WWTP - FLOW SCHEMATIC

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow(s)	Outfall Latitude and Longitude
001	Domestic Wastewater	See Item 10 above.	0.058 MGD	39° 11' 30" N 77° 37' 00" W

Waterford Wastewater Treatment Plant, USGS Topo Map – Waterford, DEQ #215A



11. Sludge Treatment and Disposal Methods:

The sludge is anaerobically digested in the lagoons. Sludge accumulated over time will be removed for treatment and disposed of when the sludge depth negatively affects the wastewater treatment efficiency or when the lagoons are closed.

12. DEQ Ambient Water Quality Monitoring Stations in Vicinity of Discharge

Table 2 – DEQ Monitoring Stations within a 2-mile radius of discharge point.

WQM Station	Description
1aXJT002.22	Unnamed Tributary to Catoctin Creek; Cottage Grove Lane
1aSOC000.01	Downstream of the discharge point, South Fork Catoctin Creek; Above confluence with North Fork Catoctin Creek
1aNOC000.42	North Fork Catoctin Creek; Rt. 681 (Milltown Road)
1aSOC001.66	Upstream of the discharge point. South Fork Catoctin Creek; Rt. 698 (Old Wheatland Road)

13. Material Storage:

TABLE 3 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Aluminum Sulfate	Five 55-gallon drums	Stored in locked building; spills contained within building
Calcium Hypochlorite Tablets	10-15 45-lb. buckets	Stored in locked building; spills contained within building
Sodium Bi-Sulfite Tablets	15-20 45-lb. buckets	Stored in locked building; spills contained within building
Pollu-Treat C316 (Polymer)	Two 50-lb. bags	Stored in locked building; spills contained within building

14. Site Inspection:

Performed by Sharon Allen on June 12, 2008 (see Attachment 2).

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

This facility discharges to South Fork Catoctin Creek. The nearest DEQ ambient monitoring station is 1aSOC001.66 located at the Rt. 698 Bridge crossing, approximately 0.06 miles upstream of Outfall 001. There is a DEQ biological monitoring station on South Fork Catoctin Creek located near the confluence with Catoctin Creek, approximately 1.5 miles downstream of Outfall 001. The following is the water quality summary for South Fork Catoctin Creek, as taken from the 2012 Integrated Report:

The following DEQ water monitoring stations were assessed for the VAN-A02R waterbody biological monitoring station 1aSOC000.01 (South Fork Catoctin Creek above its confluence with North Fork Catoctin Creek and ambient monitoring stations 1aSOC001.66, at Route 698 Bridge, and 1aSOC005.46, at Route 9 Bridge.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The *E. coli* data collected by the citizen monitoring group indicate that a water quality issue may exist for the recreation use; however, the methodology and/or data quality has not been approved for such a determination. The fecal coliform TMDL for the South Fork Catoctin Creek watershed was completed and approved on May 31, 2002.

Biological monitoring finds the aquatic life use fully supporting. However, citizen monitoring indicates a medium probability of adverse conditions for biota, which is noted with an observed effect. The wildlife use is considered fully supporting. The fish consumption use was not assessed.

b) 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

Impairment Information in the 2012 Integrated Report

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
South Fork Catoctin Creek	Recreation	*E. coli**	Catoctin Creek Bacteria 05/31/2002	1.60E+11 cfu/year fecal coliform*	200 cfu/100ml FC --- 0.058 MGD	---

*Fecal coliform bacteria water quality standard has been replaced with an *E.coli* bacteria water quality standard. The bacteria TMDL for Catoctin Creek was completed with Fecal coliform bacteria prior to the change to *E.coli* bacteria.

The planning statement dated June 4, 2013 is in Attachment 3

c) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream South Fork Catoctin Creek is located within Section 10b of the Potomac River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

The 2013 Freshwater Water Quality/Wasteload Allocation Analysis (Attachment 4) details other water quality criteria applicable to the receiving stream. Some Water Quality Criteria are dependent on the temperature, pH, and Total Hardness of the stream and final effluent.

Temperature and pH:

From the 1998 reissuance until this reissuance, the stream data used was collected downstream of the discharge point. Since DEQ does have an ambient water quality monitoring station above the discharge point, staff decided to use this data and current effluent data to determine the current Freshwater Water Quality /Wasteload Allocation Analysis. Both stream data (1aSOC001.66) (July 2003 –November 2011) and effluent data (January 2010 – July 2013) were used to determine the water quality criteria applicable to this receiving stream. By using this ambient water quality monitoring station, the stream data is not impacted by the wastewater treatment plant's discharge. Please see Attachment 5 for this data.

Season	Stream Data		Effluent Data	
	90th Percentile pH	90th Percentile Temperature	90th Percentile pH	90th Percentile Temperature
December-May	8.0 SU	18.8°C	7.7 SU	21.1°C
June – November	7.4 SU	24°C	7.6 SU	26.6°C

Total Hardness for Hardness-Dependent Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). The stream data (September 1990 – May 2001) was used to determine the average hardness value of 68.8 mg/L $CaCO_3$. Since there is no effluent hardness data available, staff guidance suggests using a default hardness value of 50 mg/L CaCO3 for streams east of the Blue Ridge. (See Attachment 6 for hardness data).

Bacteria Criteria:

The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

> *E. coli* bacteria per 100 ml of water shall not exceed a monthly geometric mean of 126 n/100 mls for a minimum of four weekly samples taken during any calendar month.

d) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, South Fork Catoctin Creek, is located within Section 10b of the Potomac River Basin. There are no special standards for this section.

e) Threatened or Endangered Species

In accordance with the VPDES Memorandum of Understanding dated April 16, 2007, with the Virginia Department of Game and Inland Fisheries (DGIF) and other agencies, this facility's discharge information was forwarded to DGIF for their review on June 25, 2013. By email dated July 31, 2013, DGIF responded by stating:

> *According to our records, South Fork Catoctin Creek is a headwater tributary to Catoctin Creek designated Threatened and Endangered (T&E) species water for the state Threatened (ST) wood turtle and ST green floater mussel. South Fork Catoctin Creek is also predicted habitat for the ST green floater.*
>
> *In order to protect aquatic resources, we generally recommend ultraviolet (UV) disinfection rather than chlorination disinfection. If chlorination becomes necessary and is used, we recommend and support continued dechlorination, prior to discharge. The ammonia limits proposed within the EPA rule are expressed on the basis of total ammonia-nitrogen (TAN). The proposed EPA ammonia limit for waters with mussels (not T&E mussels, any mussel species) is:*
>
> - *CMC (Criterion Maximum Concentration or acute) - 2.9 mg N/L (at pH 8 and 25°C)*
> - *CCC (Criterion Continuous Concentration or chronic) - 0.26 mg N/L (at pH 8 and 25°C) with a 4-day average within the 30 day average period no higher than 2.5 the CCC, which would be 0.65 mg N/L.*

DEQ has reviewed DGIF's comments and at this time no change to the draft permit are proposed. Please see Attachment 7 for DGIF's email dated July 31, 2013.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

For the past two permit reissuances, the receiving stream has been classified as Tier 1. This tier designation was based on ammonia effluent limitations to meet water quality standards and the need for a bacteria TMDL for the South Fork Catoctin Creek. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are the calculated on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from past 5 years of Discharge Monitoring Reports (January 2008 to June 2013) has been reviewed and determined to be suitable for evaluation. The following exceedances were reported on the DMRs:

BOD_5 – November 2010, December 2012, and February 2013
Ammonia as N – November 2011.

The following pollutants require a wasteload allocation analysis: Ammonia as N and Total Residual Chlorine.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o[Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- f = Decimal fraction of critical flow from mixing evaluation
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- C_s = Mean background concentration of parameter in the receiving stream.

The Water Quality Standards contain two distinct mixing zone requirements. The first requirement is general in nature and requires the "use of mixing zone concepts in evaluating permit limits for acute and chronic standards in 9VAC25-260-140.B". The second requirement is specific and establishes special restrictions for regulatory mixing zones "established by the Board".

The Department of Environmental Quality uses a simplified mixing model to estimate the amount of mixing of a discharge with the receiving stream within specified acute and chronic exposure periods. The simplified model contains the following assumptions and approximations:

- The effluent enters the stream from the bank, either via a pipe, channel or ditch.
- The effluent velocity isn't significantly greater (no more than 1 - 2 ft/sec greater) than the stream velocity.
- The receiving stream is much wider than its depth (width at least ten times the depth).
- Diffusive mixing in the longitudinal direction (lengthwise) is insignificant compared with advective transport (flow).
- Complete vertical mixing occurs instantaneously at the discharge point. This is assumed since the stream depth is much smaller than the stream width.
- Lateral mixing (across the width) is a linear function of distance downstream.
- The effluent is neutrally buoyant (e.g. the effluent discharge temperature and salinity are not significantly different from the stream's ambient temperature and salinity).
- Complete mix is determined as the point downstream where the variation in concentration is 20% or less across the width and depth of the stream.
- The velocity of passing and drifting organisms is assumed equal to the stream velocity.

If it is suitably demonstrated that a reasonable potential for lethality or chronic impacts within the physical mixing area doesn't exist, then the basic complete mix equation, with 100% of the applicable stream flow, is appropriate. If the mixing analysis determines there is a potential for lethality or chronic impacts within the physical mixing area, then the proportion of stream flow that has mixed with the effluent over the allowed exposure time is used in the basic complete mix equation. As such, the wasteload allocation equation is modified to account for the decimal fraction of critical flow (f).

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, ammonia as N is likely present since this is a WWTP treating sewage and total residual chlorine may be present since chlorine is used for disinfection. As such, Attachments 4 and 8 details the mixing analysis results and WLA derivations for these pollutants.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

Staff reevaluated stream and effluent pH and temperature data and has concluded it is significantly different than what was used previously to derive ammonia criteria. As result, staff used the following new data to determine new ammonia water quality criteria, new wasteload allocations (WLAs) and new ammonia limits (Attachments 4 and 8).

Season	Acute Ammonia	Chronic Ammonia	Ammonia Effluent Limitation
December-May	175 mg/L	91.9 mg/L	No Limit
June – November	26.2 mg/L	8.69 mg/L	12 mg/L Monthly Average 18 mg/L Weekly Maximum

DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage.

2) Total Residual Chlorine (TRC):

Chlorine is used for disinfection and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows and the mixing allowance. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.017 mg/L and a weekly average limit of 0.019 mg/L are proposed for this discharge (see Attachment 9). The sampling frequency for Total Residual Chlorine was increased from once per day to three times per day at four hour intervals. This change in sample frequency is accordance with the Permit Manual (2010). Because of the change in sample frequency, it caused the TRC effluent limit to decrease from a monthly average of 0.030 mg/L to 0.017 mg/L and a weekly average of 0.030 mg/L to 0.019 mg/L.

3) Metals/Organics:

No metals or organics data were available for review; therefore, no effluent limits are proposed.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD_5), total suspended solids (TSS), Ammonia as N, and pH limitations are proposed.

Dissolved Oxygen and BOD_5 limitations were determined in a stream model dated October 23, 1973 (Attachment 10). This stream model actually set the BOD_5 at a monthly average of 19.2 mg/L at a design flow of 0.0557 MGD. No documentation as to how the 24 mg/L monthly average for BOD_5 was determined could be found. On the cover memo of the stream model dated October 23, 1973, a notation was made on June 2, 1993, stating "Although the model indicates an effluent limitation of 19.2 mg/L BOD_5, the permit was issued with a BOD_5 effluent limitation of 24 mg/L. The effluent limitation of 24 mg/L has not degraded water quality in the receiving stream and will remain in the permit."

During the 1998 permit reissuance, the Total Suspended Solids limits were re-evaluated to determine if the revised Secondary Treatment Regulations which allowed Total Suspended Solids for sewage lagoons in the Blue Ridge, Eastern Slope Counties to be between 60 mg/L and 78 mg/L were still appropriate for this facility. It was determined at this time that this facility did not meet the requirements since it was an aerated lagoon. The Total Suspended Solids monthly average limitation was set at 30 mg/L (secondary treatment) with a weekly maximum of 45 mg/L. These Total Suspended Solids effluent limitations have been in place since then.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, BOD_5, Total Suspended Solids, Ammonia as N, pH, Dissolved Oxygen, *E. coli* Bacteria, and Total Residual Chlorine.

The limit for Total Suspended Solids is based on 9VAC25-31-30 and 40 CFR§133.102(b) Secondary Treatment.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

All sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual except for Ammonia as N (toxicity based). The Ammonia as N sample frequency is

established due to the need to demonstrate that the wastewater treatment plant is being operated to meet this effluent limitation.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD_5 and TSS (or 65% for equivalent to secondary). This permit requires influent BOD and TSS monitoring on an annual basis to demonstrate 85% removal.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19.A Effluent Limitations/Monitoring Requirements:

Design flow is 0.058 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	3,5	24 mg/L 5.3 kg/d	36 mg/L 7.9 kg/d	NA	NA	1/W	4H-C
Total Suspended Solids (TSS)	1	30 mg/L 6.6 kg/d	45 mg/L 9.9 kg/d	NA	NA	1/W	4H-C
DO	3, 5	NA	NA	6.8 mg/L	NA	1/D	Grab
Ammonia, as N (mg/L), (Jun-Nov)	3	12 mg/L	18 mg/L	NA	NA	1/W	4H-C
E. coli (Geometric Mean)	3	126 n/100mls	NA	NA	NA	1/W	Grab
Total Residual Chlorine (after contact tank)	2, 3, 4	NA	NA	1.0 mg/L	NA	3/D at 4-hr Intervals	Grab
Total Residual Chlorine (after dechlorination)	3	0.017 mg/L	0.019 mg/L	NA	NA	3/D at 4-hr Intervals	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 10

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.
1/W = Once every week.
3/D = Three times every day.

4H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 4-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of four (4) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum four (4) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

19.B Influent Monitoring Requirements:

Design flow is 0.058 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Influent BOD_5 *	1	NL	NA	NA	NA	1/YR	Grab
Influent TSS*	1	NL	NA	NA	NA	1/YR	Grab

The basis for the limitations codes are:
1. Federal Effluent Requirements

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
1/YR = Once every year.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.
* = 85% Removal Efficiency Demonstration

20. Other Permit Requirements:

a) Part I.C. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.
These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-790 and by the Water Quality Standards at 9VAC25-260-170. A minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more that 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be <1.0 mg/L with any TRC <0.6 mg/L considered a system failure. Monitoring at numerous STPs has concluded that a TRC residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.

b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.

f) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of II.

g) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

h) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage

i) TMDL Reopener. This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

j) Ground Water Monitoring Plan. This special condition requires the permittee to submit protocol for monitoring ground water to determine if the lagoons are causing any groundwater standards exceedances.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

Special Conditions:
1. The Water Quality Criteria Reopener Special Condition was removed from the permit.
2. The Nutrient Reopener Special Condition was removed from the permit.

Monitoring and Effluent Limitations:
1. Total Phosphorus effluent monitoring was removed from the Part I. A. effluent page of the permit. A review of the past five years of data has indicated that the Total Phosphorus has remained below 0.94 mg/L. It is staff's best professional judgment that further Total Phosphorus monitoring is not necessary.
2. Total Residual Chlorine for dechlorination monitoring was increased in accordance with the VPDES Permit Manual (2010) (from 1/D to 3/D at 4 hour intervals) thus decreasing the TRC effluent limitation from a monthly average of 0.030 mg/L to 0.017 mg/L and a weekly average of 0.030 mg/L to 0.019 mg/L
3. *E. coli* bacteria monitoring was increased to once per week in accordance with the VPDES Permit Manual (2010).

4. The Ammonia effluent limitation was recalculated using both new stream and effluent data; resulting in a decrease in the effluent monthly average and the weekly maximum.

23. Variances/Alternate Limits or Conditions:

There are no variances, alternate limits and/or conditions contained in this permit.

24. Public Notice Information:

First Public Notice Date: January 8, 2014 Second Public Notice Date: January 15, 2014

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 10 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

25. Additional Comments:

Previous Board Action(s): There has been no previous Board action regarding this facility.

Staff Comments: None.

Public Comment: 1) DGIF requested to review this permit in accordance with the VPDES Memorandum of Understanding dated April 16, 2007. See Section 15.e of this fact sheet for their comments.
2) No public comments were received during the public comment period.

Attachment Number	Description of Attachment
1	2008 Flow Frequency Determination Update
2	Technical Inspection on July 9, 2008
3	Planning Statement dated June 4, 2013
4	2013 Freshwater Quality / Wasteload Allocation
5	Effluent Temperature and pH, and and South Fork Catcotin Creek Temperature and pH
6	Stream Total Hardness Data
7	DGIF's Email Dated July 31, 2013
8	2013 Ammonia Effluent Calculations and Mixing Analysis
9	Statistical Analysis for TRC
10	Stream Model dated October 23, 1973
11	Public Notice

Flow Frequency Determination (updated)
Waterford WWTF VA0060500

Catoctin Creek at Taylorstown, VA (#01638480):

Drainage Area = 89.6 mi^2

Low flow		High flow	
1Q10 = 0.52 cfs	0.34 mgd	1Q10 = 4.9 cfs	3.2 mgd
7Q10 = 0.63 cfs	0.41 mgd	7Q10 = 7.0 cfs	4.5 mgd
30Q5 = 2.8 cfs	1.8 mgd	30Q10 = 12 cfs	7.8 mgd
30Q10 = 1.5 cfs	0.97 mgd	HM = 11 cfs	7.1 mgd

South Fork Catoctin Creek at discharge point:

Drainage Area = 31.98 mi^2

Low flow		High flow	
1Q10 = 0.19 cfs	0.12 mgd	1Q10 = 1.7 cfs	1.1 mgd
7Q10 = 0.22 cfs	0.14 mgd	7Q10 = 2.5 cfs	1.6 mgd
30Q5 = 1.0 cfs	0.65 mgd	30Q10 = 4.3 cfs	2.8 mgd
30Q10 = 0.43 cfs	0.28 mgd	HM = 3.9 cfs	2.5 mgd

(Gaging station data December – May 1971 – 2003)

Attachment 1

DEQ
WASTEWATER FACILITY INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0060500	**October 20, 2003**		**October 19, 2008**

Facility Name	Address	Telephone Number
Waterford Wastewater Treatment Facility	**40024 Old Wheatland Road Waterford, VA 20197**	**571-291-7878**
Owner Name	Address	Telephone Number
Loudoun County Sanitation Authority	**P.O. 4000 Ashburn, VA 20146**	**571-291-7878**
Responsible Official	Title	Telephone Number
Les Morefield	**Small Systems Operations Supervisor**	**571-291-7878**
Responsible Operator	Operator Cert. Class/number	Telephone Number
J. Scott Englund	**1911004798**	**571-291-7878**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal	**X**	Minor	**X**	Minor		Secondary	

INFLUENT CHARACTERISTICS:	DESIGN:
Flow	**.058 mgd**
Population Served	**~ 250**
Connections Served	**~ 95**
BOD_5 (Feb. 2008)	**360 mg/L**
TSS (Feb. 2008)	**250 mg/l**

EFFLUENT LIMITS: mg/L unless otherwise specified

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
pH, s.u.	**6.0**		**9.0**	**DO**	**6.8**		
TSS		**30**	**45**	**BOD_5**		**24**	**36**
TRC, final effluent		**.04**	**.048**	**TRC, contact tank**	**1.0**		
Fecal coliform, n/100 mLs (1/3 months)		**200**		**Ammonia-N (June – Nov)**		**14.3**	**21**

Attachment 2

DEQ
WASTEWATER FACILITY INSPECTION REPORT
PREFACE (continued)

	Receiving Stream	**South Fork Catoctin Creek**				
	Basin		**Potomac River**			
	Discharge Point (LAT)		**39° 11′ 30″**			
	Discharge Point (LONG)		**77° 37′ 00″**			

VPDES NO. **VA0060500**

REV 5/00

DEQ
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date: **June 12, 2008**

Date form completed: **07/09/2008**

Inspection by: **S. Mack**

Inspection agency: **DEQ NRO**

Time spent: **20 hrs.**

Announced: **Yes**

Reviewed by:

Scheduled: **Yes**

Present at inspection: **Susan Oaks- DEQ**
Les Morefield- Loudoun Water

TYPE OF FACILITY:

Domestic

[ ] Federal
[X] Nonfederal

[ ] Major
[X] Minor

Industrial

[ ] Major
[ ] Minor

[ ] Primary
[ ] Secondary

Type of inspection:

[X] Routine
[ ] Compliance/Assistance/Complaint
[ ] Reinspection

Date of last inspection: **September 26, 2002**
Agency: **DEQ NRO**

Population served: approx. **250**

Connections served: approx. **95**

Last month average: (Influent) **February 2008**:

Flow:	**.053**	MGD	TSS	**360**	s.u.	BOD5	**250**	Mg/L

Last month average: (Effluent) **May 2008**:

Flow:	**.045**	MGD	pH:	**6.8**	s.u.	DO:	**7.6**	Mg/L
BOD5	**< QL**		TSS	**3.3**	mg/L	Ammonia-N	**NA**	
TRC, CCT	**4.0**		TRC, final	**< QL**		Fecal coliform	**< 2**	n/100 ml

Quarter average: (Effluent)

Flow:	**0.043**	MGD	pH:	**6.7**	s.u.	DO	**10.2**	mg/L
BOD5	**<2**	mg/L	TSS	**11.9**	mg/L	Ammonia-N	**NA**	
TRC, CCT	**4.9**	mg/L	TRC, final	**< QL**				

DATA VERIFIED IN PREFACE [X] Updated [ ] No changes

Has there been any new construction? [ ] Yes [X] No

If yes, were plans and specifications approved? [ ] Yes [ ] No [X] NA

DEQ approval date: **NA**

(A) PLANT OPERATION AND MAINTENANCE

1. Class and number of licensed operators: I Ø II Ø III 1 IV Ø

2. Hours per day plant is manned: **1-2 hours per day when no discharge; 3-4 hours per day with discharge.**

3. Describe adequacy of staffing. [X] Good [ ] Average [ ] Poor

4. Does the plant have an established program for training personnel? [X] Yes [ ] No

5. Describe the adequacy of the training program. [X] Good [ ] Average [ ] Poor

6. Are preventive maintenance tasks scheduled? [X] Yes [ ] No

7. Describe the adequacy of maintenance. [X] Good [ ] Average [ ] Poor*

8. Does the plant experience any organic/hydraulic overloading?
   If yes, identify cause and impact on plant: [ ] Yes [X] No

9. Any bypassing since last inspection? [ ] Yes [X] No

10. Is the standby electric generator operational? [X] Yes [ ] No* [ ] NA

11. Is the STP alarm system operational? [ ] Yes [ ] No* [X] NA

12. How often is the standby generator exercised? **Weekly**
    Power Transfer Switch? **Weekly**
    Alarm System? **Weekly**

13. When was the cross connection control device last tested on the potable water service? **NA**

14. Is sludge being disposed in accordance with the approved sludge disposal plan? [ ] Yes [ ] No [X] NA

15. Is septage received by the facility? [ ] Yes [X] No
    Is septage loading controlled? [ ] Yes [X] No
    Are records maintained? [ ] Yes [X] No

16. Overall appearance of facility: [ ] Good [X] Average [ ] Poor

Comments:

11. The plant does not have an alarm system at this time, although there was one in the past. Loudoun Water plans to have the alarm reinstalled as part of the renovations planed for the facility this year.

14. Solids are pumped out and taken to the Blue Plains Interceptor by a contracted septic hauler.

(B) PLANT RECORDS

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	[X] Yes	[ ] No	[ ] NA
Instrument maintenance and calibration	[X] Yes	[ ] No	[ ] NA
Mechanical equipment maintenance	[X] Yes	[ ] No	[ ] NA
Industrial waste contribution (Municipal Facilities)	[ ] Yes	[ ] No	[X] NA

2. What does the operational log contain?

[X] Visual observations
[X] Laboratory results
[ ] Control calculations
[X] Flow measurement
[X] Process adjustments
[ ] Other (specify)

Comments:

3. What do the mechanical equipment records contain?

[X] As built plans and specs
[X] Manufacturers instructions
[X] Lubrication schedules
[X] Spare parts inventory
[X] Equipment/parts suppliers
[ ] Other (specify)

Comments:

4. What do the industrial waste contribution records contain? **NA** (Municipal Only)

[ ] Waste characteristics
[ ] Impact on plant
[ ] Locations and discharge types
[ ] Other (specify)

Comments:

5. Which of the following records are kept at the plant and available to personnel?

[X] Equipment maintenance records
[ ] Industrial contributor records
[X] Sampling and testing records
[X] Operational Log
[X] Instrumentation records

6. Records not normally available to plant personnel and their location: **Les is working on a binder with descriptions and SOPs for each small plant operated by Loudoun Water. Each operator will be provided with one of these binders to keep in his or her vehicle for reference at all sites.**

7. Were the records reviewed during the inspection? [X] Yes [ ] No

8. Are the records adequate and the O & M Manual current? [ ] Yes [X] No

9. Are the records maintained for the required 3-year time period? [X] Yes [ ] No

Comments:

8. The O&M manual needs to be updated. Outdated sections include, but are not limited to, the permit effluent limits; lab equipment, method references, and the new raw sewage pump station pumps. Dechlorination of the final effluent is not discussed at all.

The plant records are adequate.

(C) SAMPLING

1. Do sampling locations appear to be capable of providing representative samples? [X] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [X] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [X] Yes [ ] No*
4. Are composite samples collected in proportion to flow? [X] Yes [ ] No* [ ] NA
5. Are composite samples refrigerated during collection? [X] Yes [ ] No* [ ] NA
6. Does plant maintain required records of sampling? [X] Yes [ ] No*
7. Does plant run operational control tests? [X] Yes [ ] No

Comments:

(D) TESTING

1. Who performs the testing? [X] Plant **DO, pH, TRC** [ ] Central Lab [X] Commercial Lab **BOD5, TSS, Ammonia-N**

   Name: **Martel Labs**
   Baltimore, MD

   Samples were being run by Loudoun Water's central laboaratory at Rasberry Falls until November 2007. Samples are now being sent to Martel until the new laboratory at the Broad Run WWTF is fully functional.

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **Pocket colorimeter**
3. Does plant appear to have sufficient equipment to perform required tests? [X] Yes [ ] No*
4. Does testing equipment appear to be clean and/or operable? [X] Yes [ ] No*

Comments:

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
   [ ] Yes [ ] No [X] NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
   [ ] Yes [ ] No [X] NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:
   [ ] Yes [ ] No* [X] NA

Comments:

Problems identified at last inspection: October 26, 2008	Corrected	Not Corrected
1. The Operations & Maintenance (O&M) manual on file with the DEQ NVRO (Dated June 8, 1978) lists chlorine gas as the disinfection chemical. A review of the DEQ files did uncover correspondence (July 20, 1998) specific to the change over to a chlorine tablet feed system. Additional review of the DEQ files has yet to uncover the required revision pages to the O&M manual. Please submit the revision pages and any support drawings/information. **Received March 13, 2003**	[X]	[ ]
2. The LCSA staff needs to ensure that a Class III operator is on-site a minimum of 4 hours/day when the plant is discharging effluent. **While on-site time of the class III operator has improved since the last inspection, the four hour minimum is occasionally still not met. Non compliance with the O&M Manual is considered to be a violation of the permit and subject to the assessment of points in the compliance auditing system.**	[ ]	[X]

SUMMARY June 12, 2008

Comments:

- **Recent rain storms have contributed to high water levels in the lagoons this spring/summer.**
- **Waterford acts as a primary fueling station for LCSA vehicles.**

Recommendations for action:

- **The O&M manual revised pages received August 23, 2002 specifies that a Class 3 operator must be present on site for a minimum of 4 hours a day and some staff onsite for 7.5 hours when the plant is discharging. All personnel should be aware of and follow this requirement.**
- **The O&M manual needs to be updated. Outdated sections include, but are not limited to, the permit effluent limits; lab equipment, method references, and the new raw sewage pump station pumps. Dechlorination of the final effluent is not discussed at all.**

UNIT PROCESS: Sewage Pumping

1. Name of station: **Raw Sewage Wet Well**

2. Location (if not at STP):

3. Following equipment operable:

a.	all pumps	[X] Yes	[ ] No*
b.	ventilation	[X] Yes	[ ] No*
c.	control system	[X] Yes	[ ] No*
d.	sump pump	[X] Yes	[ ] No*
e.	seal water system	[X] Yes	[ ] No*

4. Reliability considerations:

a.	Class	[ ] I	[X] II	[ ] III
b.	Alarm system operable:	[ ] Yes	[X] No*	
c.	Alarm conditions monitored:	**None**		
1.	high water level	[ ] Yes	[ ] No*	
2.	high liquid level in dry well	[ ] Yes	[ ] No	[ ] NA
3.	main electric power	[ ] Yes	[ ] No	[ ] NA
4.	auxiliary electric power	[ ] Yes	[ ] No	[ ] NA
5.	failure of pump motors to start	[ ] Yes	[ ] No	[ ] NA
6.	test function	[ ] Yes	[ ] No*	
7.	other	[ ] Yes	[ ] No	
d.	Backup for alarm system operational:	[ ] Yes	[ ] No	[X] NA
e.	Alarm signal reported to (identify):	**NA**		
f.	Continuous operability provisions:			
	[X] generator	[ ] two sources of power		
	[ ] portable pump	[ ] 1 day storage		[ ] other

5. Does station have bypass: [ ] Yes* [X] No

a.	evidence of bypass use	[ ] Yes*	[ ] No	[X] NA
b.	can bypass be disinfected	[ ] Yes	[ ] No	[X] NA
c.	can bypass be measured	[ ] Yes	[ ] No	[X] NA

6. How often is station checked? **Daily**

7. General condition: [X] Good [ ] Fair [ ] Poor

Comments:

3. The raw sewage pumps were just replaced the week of this inspection.

- **Influent to the plant first enters a wet well, from which it is pumped via the raw sewage pumps to distribution box A. The distribution box allows flexibility in directing flow- can be split between the 2 lagoons or sent to one or the other lagoon. Currently, all flow is sent to lagoon #1.**

- **Water pumped into Distribution Box A during this inspection was dark grey and septic looking because it contained water and solids from the clarifiers which are pumped down prior to collecting and analyzing chlorine residuals.**

UNIT PROCESS: Ponds/Lagoons

1. Type: [X] Aerated [ ] Unaerated [ ] Polishing
2. No. of cells: **2** In operation: **2**
3. Color: [X] Green [ ] Brown [ ] Light Brown [ ] Grey [ ] Other:
4. Odor: [ ] Septic* [X] Earthy [ ] None [ ] Other:
5. System operated in: [X] Series [ ] Parallel [ ] NA
6. If aerated, are lagoon contents mixed adequately? [X] Yes [ ] No* [ ] NA
7. If aerated, is aeration system operating properly? [ ] Yes [X] No* [ ] NA
8. Evidence of following problems:

a. vegetation in lagoon or dikes	[X] Yes*	[ ] No
b. rodents burrowing on dikes	[ ] Yes*	[X] No
c. erosion	[ ] Yes*	[X] No
d. sludge bars	[ ] Yes*	[X] No
e. excessive foam	[ ] Yes*	[X] No
f. floating material	[X] Yes*	[ ] No

9. Fencing intact: [X] Yes [ ] No*
10. Grass maintained properly: [X] Yes [ ] No
11. Level control valves working properly: [X] Yes [ ] No*
12. Effluent discharge elevation:

Lagoon #1	[ ] Top	[ ] Middle	[X] Bottom
Lagoon #2	[ ] Top	[ ] Middle	[X] Bottom

13. Freeboard: **Lagoon # 1- 1 to 2 ft; lagoon #2 1 ft.**
14. Appearance of effluent: [X] Good [ ] Fair [ ] Poor
15. General condition: [ ] Good [X] Fair [ ] Poor
16. Are monitoring wells present? [ ] Yes [X] No

    Are wells adequately protected from runoff? [ ] Yes [ ] No* [X] NA

    Are caps on and secured? [ ] Yes [ ] No* [X] NA

Comments:

- **The lagoons are operated in series. Water is transferred from lagoon #1 to lagoon #2 via Distribution Box B.**
- **Distribution Box C may be used to recirculate water between the two ponds, but it is not currently for recirculation. It is used to add alum to lagoon 2 to promote settling.**

UNIT PROCESS: Ponds/Lagoons (continued)

- **The sludge level in the ponds was last measured in 2003.**

6. **Results of BOD5 analyses indicate sufficient treatment for organic material removal.**

7. **The air lines clog easily- staff runs both blowers concurrently a couple times a week to "blow them out". The air lines are the original lines- approx 25 yrs old. The header lines leading into both lagoons were replaced March/April 2007. While the staff plans to replace the air lines in Lagoon #1, the wet weather this year has limited their ability to pump the water level down to work on this project.**

8a. **Twigs and stems sticking up in the pond indicate that plants have colonized the interior sides of the lagoons when the water level is lower.**

8f. **Duckweed.**

9. **A couple trees had fallen during recent thunderstorms, at least one of which was resting on the fence. However, the fence was holding up well and Les had plans for tree removal in next several days.**

13. **There was very little freeboard in either pond; the center baffle wall in lagoon # 2 was about one foot under water. This permit does not have a freeboard requirement. However, the O&M manual states that the earth walls are designed to extend three feet vertically above the wastewater surface.**

UNIT PROCESS: Sedimentation

[ ] Primary [X] Secondary [ ] Tertiary

1.	Number of units: **2**	In operation: **2**		
2.	Proper flow distribution between units:	[X] Yes	[ ] No*	[ ] NA
3.	Signs of short circuiting and/or overloads:	[ ] Yes	[X] No	
4.	Effluent weirs level:	[X] Yes	[ ] No*	
	Clean:	[X] Yes	[ ] No*	
5.	Scum collection system working properly:	[ ] Yes	[ ] No*	[X] NA
6.	Sludge collection system working properly:	[X] Yes	[ ] No*	
7.	Influent, effluent baffle systems working properly:	[X] Yes	[ ] No*	
8.	Chemical addition:	[X] Yes	[ ] No	
	Chemicals:	**Polymer (150 ml/10 gal H2O) is added between Distribution Box C and the clarifier splitter box.**		
9.	Effluent characteristics:	**Clear and odor free**		
10.	General condition:	[X] Good	[ ] Fair	[ ] Poor

Comments:

- **There was a lot of algae and duckweed on the water's surface in the clarifiers.**

4. **Floating solids collect on the weirs and slough off to bottom of tank as their combined weight increases.**

6. **The clarifiers are designed with hopper bottoms for sludge collection.**

UNIT PROCESS: Chlorination

1 No. of chlorinators: **2** In operation: **2**

2. No. of evaporators: In operation:

3. No. of chlorine contact tanks: **2** In operation: **2**

4. Proper flow distribution between units: [**X**] Yes [ ] No* [ ] NA

5. How is chlorine introduced into the wastewater?
[ ] Perforated diffusers
[ ] Injector with single entry point
[**X**] Other **Tablet feeders with two tubes each.**

6. Chlorine residual in basin effluent: **4.1 mg/L measured at 1015 by L. Morefield**

7. Applied chlorine dosage: **Topped off as needed**

8. Contact basins adequately baffled: [**X**] Yes [ ] No*

9. Adequate ventilation: **Outside**
a. cylinder storage area [ ] Yes [ ] No* [**X**] NA
b. equipment room [ ] Yes [ ] No* [**X**] NA

10. Proper safety precautions used: [**X**] Yes [ ] No*

11. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

- **The chlorine contact tanks and the final tank are drained down weekly when not discharging to remove any storm water and control the discharge. These tanks are completely drained and cleaned out once monthly. Water is sent back to the raw influent pump station.**

- **The drain valves for both chlorine contact tanks and the final tank were replaced in 2004.**

6. The first sample collected from the contact tank at 0956 had a TRC result of < 2.2 mg/L. A second sample was collected at 1012 and was diluted 1:1.

UNIT PROCESS: Dechlorination

1. Chemical used: [ ] Sulfur Dioxide [X] Bisulfite [ ] Other
2. No. of sulfonators: **0** In operation: **0**
3. No. of evaporators: **0** In operation: **0**
4. No. of chemical feeders: **0** In operation: **0**
5. No. of contact tanks: **2** In operation: **2**
6. Proper flow distribution between units: [X] Yes [ ] No* [ ] NA
7. How is chemical introduced into the wastewater?
   [ ] Perforated diffusers
   [ ] Injector with single entry point
   [X] Other **Tablet feeders**
8. Control system operational: [ ] Yes [ ] No* [X] NA
   a. residual analyzers: [ ] Yes [X] No*
   b. system adjusted: [ ] Automatic [X] Manual [ ] Other:
9. Applied dechlorination dose: **Topped off as needed**
10. Chlorine residual in basin effluent: **< QL measured at 1018 by L. Morefield**
11. Contact basins adequately baffled: [X] Yes [ ] No* [ ] NA
12. Adequate ventilation: **Outside**
    a. cylinder storage area: [ ] Yes [ ] No* [X] NA
    b. equipment room: [ ] Yes [ ] No* [X] NA
13. Proper safety precautions used: [X] Yes [ ] No*
14. General condition: [X] Good [ ] Fair [ ] Poor

Comments:

6. **The first sample collected showed a TRC result > 0.1 mg/L. The dechlorination tables were shaken down in the tubes and a repeat sample was collected at 1012.**

- **pH was measured via grab sample collected at 1138. pH = 6.9 s.u @27.2 ° C at 1140 by S. Mack.**

UNIT PROCESS: Post Aeration

1. Number of units: **2** In operation: **2**

2. Proper flow distribution between units: [ ] Yes [ ] No* [X] NA

3. Evidence of following problems:
   a. dead spots [ ] Yes* [X] No
   b. excessive foam [ ] Yes* [X] No
   c. poor aeration [ ] Yes* [X] No
   d. mechanical equipment failure [ ] Yes* [X] No [ ] NA

4. How is the aerator controlled? [ ] Time clock [ ] Manual [X] Continuous [ ] Other* [ ] NA

5. What is the current operating schedule? **Continuous**

6. Step weirs level: [ ] Yes [ ] No [X] NA

7. Effluent D.O. level: **Not measured**

8. General condition: [X] Good [ ] Fair [ ] Poor

Comments:

- **Post-aeration is added before and after the dechlorination tablet feeders.**

UNIT PROCESS: Flow Measurement

[ ] Influent [ ] Intermediate [X] Effluent

1. Type measuring device: **Mag meter**

2. Present reading: **0.063 mgd @ 1205**

3. Bypass channel: [ ] Yes [X] No
   Metered: [ ] Yes [X] No

4. Return flows discharged upstream from meter: [ ] Yes [X] No
   Identify:

5. Device operating properly: [X] Yes [ ] No*

6. Date of last calibration: **May 5th and 6th 2008 by Instrilogic**

7. Evidence of following problems:

   a. obstructions [ ] Yes* [X] No
   b. grease [ ] Yes* [X] No

   8. General condition: [X] Good [ ] Fair [ ] Poor

Comments:

UNIT PROCESS: Effluent/Plant Outfall

1. Type Outfall [X] Shore based [ ] Submerged
2. Type if shore based: [ ] Wingwall [X] Headwall [ ] Rip Rap
3. Flapper valve: [X] Yes [ ] No [ ] NA
4. Erosion of bank: [ ] Yes [X] No [ ] NA
5. Effluent plume visible? [X] Yes* [ ] No
6. Condition of outfall and supporting structures: [X] Good [ ] Fair [ ] Poor*
7. Final effluent, evidence of following problems:
   a. oil sheen [ ] Yes* [X] No
   b. grease [ ] Yes* [X] No
   c. sludge bar [ ] Yes* [X] No
   d. turbid effluent [ ] Yes* [X] No
   e. visible foam [ ] Yes* [X] No
   f. unusual color [ ] Yes* [X] No

Comments:

4. Evidence of cows using area right around the outfall. Cows were seen downstream from the outfall.

5. Effluent entering the stream was clearer than water in the stream due to recent heavy rains.

- **The receiving stream will back up into plant when stream's water level covers the flapper valve.**

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
LABORATORY INSPECTION REPORT

10/01

FACILITY NO: VA00 VA0060500	INSPECTION DATE: June 12, 2008	PREVIOUS INSP. DATE: September 26, 2002	PREVIOUS EVALUATION: Deficiencies	TIME SPENT: 2 hrs

NAME/ADDRESS OF FACILITY:	FACILITY CLASS:	FACILITY TYPE:	UNANNOUNCED INSPECTION?
Waterford Wastewater Treatment Facility 40024 Old Wheatland Road Waterford, VA 20197	( ) MAJOR (X) MINOR ( ) SMALL ( ) VPA/NDC	(X) MUNICIPAL ( ) INDUSTRIAL ( ) FEDERAL ( ) COMMERCIAL LAB	( ) YES (X) NO **FY-SCHEDULED INSPECTION?** (X) YES ( ) NO

INSPECTOR(S):	REVIEWERS:	PRESENT AT INSPECTION:
Sharon Mack		Susan Oakes- DEQ Les Morefield – Loudoun Water

LABORATORY EVALUATION	DEFICIENCIES? Yes	No
LABORATORY RECORDS	X	
GENERAL SAMPLING & ANALYSIS		X
LABORATORY EQUIPMENT		X
DISSOLVED OXYGEN ANALYSIS PROCEDURES		X
pH ANALYSIS PROCEDURES		X
TOTAL RESIDUAL CHLORINE ANALYSIS PROCEDURES		X

QUALITY ASSURANCE/QUALITY CONTROL

Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
Y	REPLICATE SAMPLES	TRC	5 % of samples
N	SPIKED SAMPLES		
Y	STANDARD SAMPLES	pH, TRC	Daily
N	SPLIT SAMPLES		
Y	SAMPLE BLANKS	TRC	Daily
N	OTHER		
N	EPA-DMR QA DATA?	RATING: ( ) No Deficiency ( ) Deficiency (X) NA	
N	QC SAMPLES PROVIDED?	RATING: ( ) No Deficiency ( ) Deficiency (X) NA	

FACILITY #: **VA0060500**

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

X	SAMPLING DATE	X	ANALYSIS DATE	X	CONT MONITORING CHART
X	SAMPLING TIME	X	ANALYSIS TIME	X	INSTRUMENT CALIBRATION
X	SAMPLE LOCATION	X	TEST METHOD	X	INSTRUMENT MAINTENANCE
				X	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

X	SAMPLING SCHEDULES	X	CALCULATIONS	X	ANALYSIS PROCEDURES

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	X		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	X		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: **May 2008**	X		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	X		

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	X		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	X		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?	X		
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?	X		
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: **BOD5, TSS, Ammonia-n** **Martel Labs** **1025 Cromwell Bridge Rd** **Baltimore, MD. 21286**	X		

LABORATORY EQUIPMENT SECTION

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	X		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	X		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			X
ARE ANALYTICAL BALANCE(S) ADEQUATE?			X

LABORATORY INSPECTION REPORT SUMMARY

FACILITY NAME:	FACILITY NO: VA0060500	INSPECTION DATE: June 12, 2008
(X) Deficiencies	( ) No Deficiencies	

LABORATORY RECORDS

The Laboratory Records section had **One Deficiency** noted during the inspection.

- **The Certification of Operator Competence/Initial Demonstration of Capability had not been done This deficiency has been cited on several laboratory inspection reports for facilities run by Loudoun Water.**

GENERAL SAMPLING AND ANALYSIS

The General Sampling and Analysis section had **No Deficiencies** noted during the inspection.

LABORATORY EQUIPMENT

The Laboratory Equipment section had **No Deficiencies** noted during the inspection.

INDIVIDUAL PARAMETERS

Dissolved Oxygen (DO)

The analysis for the parameter of DO had **No Deficiencies** noted during the inspection.

Total Residual Chlorine (TRC)

The analysis for the parameter of TRC had **No Deficiencies** noted during the inspection.

pH

The analysis for the parameter of pH had **No Deficiencies** noted during the inspection.

COMMENTS

The staff should check the DEQ website at http://www.deq.state.va.us/vpdes/checklist.html and download the most recent inspection check sheets to keep up to date with changes in minimal laboratory requirements.

ANALYST:	**Les Morefield**	VPDES NO.	**VA0060500**

Parameter: Dissolved Oxygen
Method: Electrode
Facility Elevation ~ 400 ft
01/08

Meter: **WTI Multimeter**

METHOD OF ANALYSIS:

X	18th Edition of Standard Methods-4500-O G
	21st or Online Editions of Standard Methods-4500-O G (01)

	DO is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]	**Y**	**N**
1)	If samples are collected, is collection carried out with a minimum of turbulence and air bubble formation and is the sample bottle allowed to overflow several times its volume? [B.3]	**In situ**	
2)	Are meter and electrode operable and providing consistent readings? [3]	**X**	
3)	Is membrane in good condition without trapped air bubbles? [3.b]	**X**	
4)	Is correct filling solution used in electrode? [Mfr.]	**X**	
5)	Are water droplets shaken off the membrane prior to calibration? [Mfr.]	**X**	
6)	Is meter calibrated before use or at least daily? [Mfr.]	**X**	
7)	Is calibration procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
8)	Is sample stirred during analysis? [Mfr.]	**In situ**	
9)	Is the sample analysis procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
10)	Is meter stabilized before reading D.O.? [Mfr.]	**X**	
11)	Is electrode stored according to manufacturer's instructions? [Mfr.]	**X**	
12)	Is a duplicate sample analyzed after every 20 samples if citing 18th or 19th Edition [1020 B.6] or after every 10 samples for 20th or 21st Edition [Part 1020] Note: Not required for *in situ* samples.	**In situ**	
13)	If a duplicate sample is analyzed, is the reported value for that sampling event, the average concentration of the sample and the duplicate? [DEQ]	**NA**	
14)	If a duplicate sample is analyzed, is the relative percent difference (RPD) < 20? [18th ed. Table 1020 I; 21st ed. DEQ]	**NA**	

COMMENTS:	**Analysis was discussed but not demonstrated.**
PROBLEMS:	**None noted or discussed**

ANALYST:	**Les Morefield**	VPDES NO	**VA0060500**

Parameter: Total Residual Chlorine
Method: DPD Colorimetric (HACH Pocket Colorimeter™)
01/08

Instrument: **Hach Pocket colorimeter**

METHOD OF ANALYSIS:

X	HACH Manufacturer's Instructions (Method 8167) plus an edition of Standard Methods
	18th Edition of Standard Methods 4500-Cl G
	21st Edition of Standard Methods 4500-Cl G (00)

		Y	N
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing this analysis? NOTE: Analyze 4 samples of known TRC. Must use a lot number or source that is different from that used to prepare calibration standards. May not use Spec√ ™. [SM 1020 B.1]		X
2)	Are the DPD PermaChem® Powder Pillows stored in a cool, dry place? [Mfr.]	X	
3)	Are the pillows within the manufacturer's expiration date? [Mfr]	X	
4)	Has buffering capability of DPD pillows been checked annually? (Pillows should adjust sample pH to between 6 and 7) [Mfr]	X	
5)	When pH adjustment is required, is H_2SO_4 or NaOH used? [11.3.1]	X	
6)	Are cells clean and in good condition? [Mfr]	X	
7)	Is the low range (0.01-mg/L resolution) used for samples containing residuals from 0-2.00 mg/L? [Mfr.]	X	
8)	Is calibration curve developed (may use manufacturer's calibration) with daily verification using a high and a low standard? NOTE: May use manufacturer's installed calibration and commercially available chlorine standards for daily calibration verifications. [18th ed 1020 B.5; 21st ed 4020 B.2.b]	X	
9)	Is the 10-mL cell (2.5-cm diameter) used for samples from 0-2.00 mg/L? [Mfr.]	X	
10)	Is the meter zeroed correctly by using sample as blank for the cell used? [Mfr.]	X	
11)	Is the instrument cap placed correctly on the meter body when the meter is zeroed and when the sample is analyzed? [Mfr.]	X	
12)	Is the DPD Total Chlorine PermaChem® Powder Pillow mixed into the sample? [HACH 11.1]	X	
13)	Is the analysis made at least three minutes but not more than six minutes after PermaChem® Powder Pillow addition? [11.2]	X	
14)	If read-out is flashing [2.20], is sample diluted correctly, then reanalyzed? [1.2 & 2.0]	X	
15)	Are samples analyzed within 15 minutes of collection? [40 CFR Part 136]	X	
16)	Is a duplicate sample analyzed after every 20 samples if citing 18th Edition [SM 1020 B.6] or daily for 21st Edition [SM 4020 B.3.c]?	X	
17)	If duplicate sample is analyzed, is the relative percent difference (RPD) ≤ 20? [18th ed. Table 1020 I; 21st ed. DEQ]	X	

PROBLEMS:	**1) Certification of Operator Competence/Initial Demonstration of Capability has not been done.**
COMMENTS:	**16) Analysis of duplicates began in May 2008.**

ANALYST:	**Les Morefield**	VPDES NO	**VA0060500**

Parameter: Hydrogen Ion (pH)
Method: Electrometric
01/08

Meter: **WTI Multimeter**

METHOD OF ANALYSIS

X	18th Edition of Standard Methods-4500-H-B
	21st or On-Line Edition of Standard Methods-4500-H-B (00)

	pH is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]	**Y**	**N**
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing the analysis? **NOTE:** Analyze 4 samples of known pH. May use external source of buffer (different lot/manufacturer than buffers used to calibrate meter). Recovery for each of the 4 samples must be ± 0.1 SU of the known concentration of the sample. [SM 1020 B.1]		**X**
2)	Is the electrode in good condition (no chloride precipitate, etc.)? [2.b/c and 5.b]	**X**	
3)	Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]	**X**	
4)	Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [4.a] NOTE: Follow manufacturer's instructions.	**X**	
5)	After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Agreement should by within ± 0.1 SU. [4.a]	**X**	
6)	Do the buffer solutions appear to be free of contamination or growths? [3.1]	**X**	
7)	Are buffer solutions within their listed shelf life or have they been prepared within the last 4 weeks? [3.a]	**X**	
8)	Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]	**X**	
9)	For meters with ATC that also have temperature display, was the thermometer calibrated annually? [SM2550 B.1]	**X**	
10)	Is the temperature of buffer solutions and samples recorded when determining pH? [4.a]	**X**	
11)	Is sample analyzed within 15 minutes of collection? [40 CFR 136.6]	**In situ**	
12)	Was the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinse solution)? [4.a]	**X**	
13)	Is the sample stirred gently at a constant speed during measurement? [4.b]	**In situ**	
14)	Does the meter hold a steady reading after reaching equilibrium? [4.b]	**X**	
15)	Is a duplicate sample analyzed after every 20 samples if citing 18th or 19th Edition [1020 B.6] or after every 10 samples for 20th or 21st Edition [Part 1020] Note: Not required for *in situ* samples.	**In situ**	
16)	Is pH of duplicate samples within 0.1 SU of the original sample? [Part 1020]	**NA**	
17)	Is there a written procedure for which result will be reported on DMR (Sample or Duplicate) and is this procedure followed? [DEQ]	**NA**	

COMMENTS:	**The Multimeter was compared to a NIST thermometer on 5-21-08- correction factor is + 0.1.**
PROBLEMS:	**1) Certification of Operator Competence/Initial Demonstration of Capability has not been done.**

To:	Joan C. Crowther
From:	Jennifer Carlson
Date:	June 4, 2013
Subject:	Planning Statement for Waterford WWTP
Permit Number:	VA0060500

Information for Outfall 001:

Discharge Type: Municipal
Discharge Flow: 0.058 MGD
Receiving Stream: South Fork Catoctin Creek
Latitude / Longitude: 39° 11'30"/ 77° 37'00"
Rivermile: 1.59
Streamcode: 1aSOC
Waterbody: VAN-A02R
Water Quality Standards: Section 10b, Class III, Special Standards None.
Drainage Area: 31.98 sq.mile

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

   This facility discharges to South Fork Catoctin Creek. The nearest DEQ ambient monitoring station is 1aSOC001.66 located at the Rt. 698 bridge crossing, approximately 0.06 miles upstream of Outfall 001. There is a DEQ biological monitoring station on South Fork Catoctin Creek located near the confluence with Catoctin Creek, approximately 1.5 miles downstream of Outfall 001. The following is the water quality summary for South Fork Catoctin Creek, as taken from the Draft 2012 Integrated Report*:

   Class III, Section 10b.

   DEQ biological monitoring station 1aSOC000.01, ambient monitoring stations 1aSOC001.66, at Route 698, and 1aSOC005.46, at Route 9.

   E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The E. coli data collected by the citizen monitoring group indicate that a water quality issue may exist for the recreation use; however, the methodology and/or data quality has not been approved for such a determination. A fecal coliform TMDL for the South Fork Catoctin Creek watershed has been completed and approved.

   Biological monitoring finds the aquatic life use fully supporting. However, citizen monitoring indicates a medium probability of adverse conditions for biota, which is noted with an observed effect. The wildlife use is considered fully supporting. The fish consumption use was not assessed.

**Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

Yes.

Table A. 303(d) Impairment and TMDL information for the receiving stream segment

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the Draft 2012 Integrated Report*						
South Fork Catoctin Creek	Recreation	*E. coli*	Catoctin Creek Bacteria 05/31/2002	1.60E+11 cfu/year fecal coliform	200 cfu/100ml FC --- 0.058 MGD	---

**Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

No.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within 5 miles of this discharge.

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Waterford WWTP (June - November) Permit No.: VA0060500

Receiving Stream: South Fork Catoctin Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	68.8 mg/L
90% Temperature (Annual) =	24.8 deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	7.94 SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0.12 MGD
7Q10 (Annual) =	0.14 MGD
30Q10 (Annual) =	0.28 MGD
1Q10 (Wet season) =	1.1 MGD
30Q10 (Wet season)	2.8 MGD
30Q5 =	0.65 MGD
Harmonic Mean =	2.5 MGD

Mixing Information

Annual - 1Q10 Mix =	44.09 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	26.6 deg C
90% Temp (Wet season) =	deg C
90% Maximum pH =	7.6 SU
10% Maximum pH =	SU
Discharge Flow =	0.058 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Acrolein	0	--	--	na	9.3E+00	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	5.7E+00	--	na	2.2E-02	--	--	--	--	--	--	--	--	5.7E+00	--	na	2.2E-02
Ammonia-N (mg/l) (Yearly)	0	1.37E+01	1.49E+00	na	--	2.62E+01	8.69E+00	na	--	--	--	--	--	--	--	--	--	2.62E+01	8.69E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	9.86E+00	2.69E+00	na	--	1.97E+02	1.32E+02	na	--	--	--	--	--	--	--	--	--	1.97E+02	1.32E+02	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.9E+05	--	--	--	--	--	--	--	--	--	--	na	4.9E+05
Antimony	0	--	--	na	6.4E+02	--	--	na	7.8E+03	--	--	--	--	--	--	--	--	--	--	na	7.8E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	6.5E+02	5.1E+02	na	--	--	--	--	--	--	--	--	--	6.5E+02	5.1E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	2.2E+04	--	--	--	--	--	--	--	--	--	--	na	2.2E+04
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	8.8E-02	--	--	--	--	--	--	--	--	--	--	na	8.8E-02
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	2.3E+02	--	--	--	--	--	--	--	--	--	--	na	2.3E+02
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	7.9E+05	--	--	--	--	--	--	--	--	--	--	na	7.9E+05
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	9.7E+02	--	--	--	--	--	--	--	--	--	--	na	9.7E+02
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	6.2E+04	--	--	--	--	--	--	--	--	--	--	na	6.2E+04
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	2.3E+04	--	--	--	--	--	--	--	--	--	--	na	2.3E+04
Cadmium	0	2.2E+00	7.9E-01	na	--	4.1E+00	2.7E+00	na	--	--	--	--	--	--	--	--	--	4.1E+00	2.7E+00	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	4.6E+00	1.5E-02	na	3.6E-01	--	--	--	--	--	--	--	--	4.6E+00	1.5E-02	na	3.6E-01
Chloride	0	8.6E+05	2.3E+05	na	--	1.6E+06	7.9E+05	na	--	--	--	--	--	--	--	--	--	1.6E+06	7.9E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	3.6E+01	3.8E+01	na	--	--	--	--	--	--	--	--	--	3.6E+01	3.8E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04

Attachment 4

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	5.7E+03	--	--	--	--	--	--	--	--	--	--	na	5.7E+03
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.3E+05	--	--	--	--	--	--	--	--	--	--	na	1.3E+05
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	--	--	na	1.8E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	1.6E-01	1.4E-01	na	--	--	--	--	--	--	--	--	--	1.6E-01	1.4E-01	na	--
Chromium III	0	3.7E+02	5.1E+01	na	--	7.1E+02	1.7E+02	na	--	--	--	--	--	--	--	--	--	7.1E+02	1.7E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	3.1E+01	3.8E+01	na	--	--	--	--	--	--	--	--	--	3.1E+01	3.8E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	7.9E-01	--	--	--	--	--	--	--	--	--	--	na	7.9E-01
Copper	0	8.2E+00	6.1E+00	na	--	1.6E+01	2.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	2.1E+01	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	4.2E+01	1.8E+01	na	2.0E+05	--	--	--	--	--	--	--	--	4.2E+01	1.8E+01	na	2.0E+05
DDD [C]	0	--	--	na	3.1E-03	--	--	na	1.4E-01	--	--	--	--	--	--	--	--	--	--	na	1.4E-01
DDE [C]	0	--	--	na	2.2E-03	--	--	na	9.7E-02	--	--	--	--	--	--	--	--	--	--	na	9.7E-02
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	2.1E+00	3.4E-03	na	9.7E-02	--	--	--	--	--	--	--	--	2.1E+00	3.4E-03	na	9.7E-02
Demeton	0	--	1.0E-01	na	--	--	3.4E-01	na	--	--	--	--	--	--	--	--	--	--	3.4E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	3.3E-01	5.8E-01	na	--	--	--	--	--	--	--	--	--	3.3E-01	5.8E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	1.2E+01	--	--	--	--	--	--	--	--	--	--	na	1.2E+01
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	7.5E+03	--	--	--	--	--	--	--	--	--	--	na	7.5E+03
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	8.7E+04	--	--	--	--	--	--	--	--	--	--	na	8.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	3.5E+03	--	--	--	--	--	--	--	--	--	--	na	3.5E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	6.6E+03	--	--	--	--	--	--	--	--	--	--	na	6.6E+03
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	9.3E+03	--	--	--	--	--	--	--	--	--	--	na	9.3E+03
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	4.6E-01	1.9E-01	na	2.4E-02	--	--	--	--	--	--	--	--	4.6E-01	1.9E-01	na	2.4E-02
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	5.4E+05	--	--	--	--	--	--	--	--	--	--	na	5.4E+05
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.3E+07	--	--	--	--	--	--	--	--	--	--	na	1.3E+07
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	5.5E+04	--	--	--	--	--	--	--	--	--	--	na	5.5E+04
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	3.4E+03	--	--	--	--	--	--	--	--	--	--	na	3.4E+03
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	6.2E-07	--	--	--	--	--	--	--	--	--	--	na	6.2E-07
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	8.8E+01	--	--	--	--	--	--	--	--	--	--	na	8.8E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	4.2E-01	1.9E-01	na	1.1E+03	--	--	--	--	--	--	--	--	4.2E-01	1.9E-01	na	1.1E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	4.2E-01	1.9E-01	na	1.1E+03	--	--	--	--	--	--	--	--	4.2E-01	1.9E-01	na	1.1E+03
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	4.2E-01	1.9E-01	--	--	--	--	--	--	--	--	--	--	4.2E-01	1.9E-01	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	1.6E-01	1.2E-01	na	7.3E-01	--	--	--	--	--	--	--	--	1.6E-01	1.2E-01	na	7.3E-01
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.7E+00	--	--	--	--	--	--	--	--	--	--	na	3.7E+00

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Fluorene	0	--	--	na	5.3E+03	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	3.4E-02	na	--	--	--	--	--	--	--	--	--	--	3.4E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	9.9E-01	1.3E-02	na	3.5E-02	--	--	--	--	--	--	--	--	9.9E-01	1.3E-02	na	3.5E-02
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	3.9E-04	9.9E-01	1.3E-02	na	1.7E-02	--	--	--	--	--	--	--	--	9.9E-01	1.3E-02	na	1.7E-02
Hexachlorobenzene [C]	0	--	--	na	2.9E-03	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorobutadiene [C]	0	--	--	na	1.8E+02	--	--	na	7.9E+03	--	--	--	--	--	--	--	--	--	--	na	7.9E+03
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	4.9E-02	--	--	na	2.2E+00	--	--	--	--	--	--	--	--	--	--	na	2.2E+00
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	1.7E-01	--	--	na	7.5E+00	--	--	--	--	--	--	--	--	--	--	na	7.5E+00
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	1.8E+00	1.8E+00	--	na	7.9E+01	--	--	--	--	--	--	--	--	1.8E+00	--	na	7.9E+01
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	na	1.3E+04
Hexachloroethane [C]	0	--	--	na	3.3E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	6.8E+00	na	--	--	--	--	--	--	--	--	--	--	6.8E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone [C]	0	--	--	na	9.6E+03	--	--	na	4.2E+05	--	--	--	--	--	--	--	--	--	--	na	4.2E+05
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	6.1E+01	7.5E+00	na	--	1.2E+02	2.6E+01	na	--	--	--	--	--	--	--	--	--	1.2E+02	2.6E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	3.4E-01	na	--	--	--	--	--	--	--	--	--	--	3.4E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	2.7E+00	2.6E+00	--	--	--	--	--	--	--	--	--	--	2.7E+00	2.6E+00	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.8E+04	--	--	--	--	--	--	--	--	--	--	na	1.8E+04
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	2.6E+05	--	--	--	--	--	--	--	--	--	--	na	2.6E+05
Methoxychlor	0	--	3.0E-02	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.2E+02	1.4E+01	na	4.6E+03	2.2E+02	4.7E+01	na	5.6E+04	--	--	--	--	--	--	--	--	2.2E+02	4.7E+01	na	5.6E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	8.4E+03	--	--	--	--	--	--	--	--	--	--	na	8.4E+03
N-Nitrosodimethylamine [C]	0	--	--	na	3.0E+01	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
N-Nitrosodiphenylamine [C]	0	--	--	na	6.0E+01	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
N-Nitrosodi-n-propylamine [C]	0	--	--	na	5.1E+00	--	--	na	2.2E+02	--	--	--	--	--	--	--	--	--	--	na	2.2E+02
Nonylphenol	0	2.8E+01	6.6E+00	--	--	5.4E+01	2.3E+01	na	--	--	--	--	--	--	--	--	--	5.4E+01	2.3E+01	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	1.2E-01	4.4E-02	na	--	--	--	--	--	--	--	--	--	1.2E-01	4.4E-02	na	--
PCB Total [C]	0	--	1.4E-02	na	6.4E-04	--	4.8E-02	na	2.8E-02	--	--	--	--	--	--	--	--	--	4.8E-02	na	2.8E-02
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	1.5E-02	2.0E-02	na	1.3E+03	--	--	--	--	--	--	--	--	1.5E-02	2.0E-02	na	1.3E+03
Phenol	0	--	--	na	8.6E+05	--	--	na	1.0E+07	--	--	--	--	--	--	--	--	--	--	na	1.0E+07
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.9E+04	--	--	--	--	--	--	--	--	--	--	na	4.9E+04
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.9E+01	--	--	--	--	--	--	--	--	--	--	na	4.9E+01
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	3.8E+01	1.7E+01	na	5.1E+04	--	--	--	--	--	--	--	--	**3.8E+01**	**1.7E+01**	na	**5.1E+04**
Silver	0	1.4E+00	--	na	--	2.7E+00	--	na	--	--	--	--	--	--	--	--	--	**2.7E+00**	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	--	--	na	**1.8E+03**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	**1.5E+03**
Thallium	0	--	--	na	4.7E-01	--	--	na	5.7E+00	--	--	--	--	--	--	--	--	--	--	na	**5.7E+00**
Toluene	0	--	--	na	6.0E+03	--	--	na	7.3E+04	--	--	--	--	--	--	--	--	--	--	na	**7.3E+04**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	1.4E+00	6.8E-04	na	1.2E-01	--	--	--	--	--	--	--	--	**1.4E+00**	**6.8E-04**	na	**1.2E-01**
Tributyltin	0	4.6E-01	7.2E-02	na	--	8.8E-01	2.5E-01	na	--	--	--	--	--	--	--	--	--	**8.8E-01**	**2.5E-01**	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	**8.5E+02**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	**7.1E+03**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	na	**1.3E+04**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	**1.1E+03**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	**1.1E+03**
Zinc	0	7.5E+01	8.0E+01	na	2.6E+04	1.4E+02	2.7E+02	na	3.2E+05	--	--	--	--	--	--	--	--	**1.4E+02**	**2.7E+02**	na	**3.2E+05**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	7.8E+03
Arsenic	2.6E+02
Barium	na
Cadmium	1.6E+00
Chromium III	1.0E+02
Chromium VI	1.2E+01
Copper	8.2E+00
Iron	na
Lead	1.5E+01
Manganese	na
Mercury	1.1E+00
Nickel	2.8E+01
Selenium	1.0E+01
Silver	1.1E+00
Zinc	5.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Waterford WWTP (December - May) Permit No.: VA0060500

Receiving Stream: South Fork Catoctin Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	68.8 mg/L	1Q10 (Annual) =	0.12 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	50 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0.14 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) =	18.8 deg C	30Q10 (Annual) =	0.28 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	21.1 deg C
90% Maximum pH =	8 SU	1Q10 (Wet season) =	1.1 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	7.7 SU
10% Maximum pH =	SU	30Q10 (Wet season)	2.8 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =	1	30Q5 =	0.65 MGD			Discharge Flow =	0.058 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	2.5 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Acrolein	0	--	--	na	9.3E+00	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	9.2E+00	--	na	2.2E-02	--	--	--	--	--	--	--	--	9.2E+00	--	na	2.2E-02
Ammonia-N (mg/l) (Yearly)	0	1.05E+01	2.68E+00	na	--	3.24E+01	1.56E+01	na	--	--	--	--	--	--	--	--	--	3.24E+01	1.56E+01	na	--
Ammonia-N (mg/l) (High Flow)	0	8.75E+00	1.86E+00	na	--	1.75E+02	9.19E+01	na	--	--	--	--	--	--	--	--	--	1.75E+02	9.19E+01	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.9E+05	--	--	--	--	--	--	--	--	--	--	na	4.9E+05
Antimony	0	--	--	na	6.4E+02	--	--	na	7.8E+03	--	--	--	--	--	--	--	--	--	--	na	7.8E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	1.0E+03	5.1E+02	na	--	--	--	--	--	--	--	--	--	1.0E+03	5.1E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	2.2E+04	--	--	--	--	--	--	--	--	--	--	na	2.2E+04
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	8.8E-02	--	--	--	--	--	--	--	--	--	--	na	8.8E-02
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	2.3E+02	--	--	--	--	--	--	--	--	--	--	na	2.3E+02
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	7.9E+05	--	--	--	--	--	--	--	--	--	--	na	7.9E+05
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	9.7E+02	--	--	--	--	--	--	--	--	--	--	na	9.7E+02
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	6.2E+04	--	--	--	--	--	--	--	--	--	--	na	6.2E+04
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	2.3E+04	--	--	--	--	--	--	--	--	--	--	na	2.3E+04
Cadmium	0	2.3E+00	7.9E-01	na	--	7.1E+00	2.7E+00	na	--	--	--	--	--	--	--	--	--	7.1E+00	2.7E+00	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	7.4E+00	1.5E-02	na	3.6E-01	--	--	--	--	--	--	--	--	7.4E+00	1.5E-02	na	3.6E-01
Chloride	0	8.6E+05	2.3E+05	na	--	2.6E+06	7.9E+05	na	--	--	--	--	--	--	--	--	--	2.6E+06	7.9E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	5.8E+01	3.8E+01	na	--	--	--	--	--	--	--	--	--	5.8E+01	3.8E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	5.7E+03	--	--	--	--	--	--	--	--	--	--	na	5.7E+03
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.3E+05	--	--	--	--	--	--	--	--	--	--	na	1.3E+05
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	--	--	na	1.8E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	2.5E-01	1.4E-01	na	--	--	--	--	--	--	--	--	--	2.5E-01	1.4E-01	na	--
Chromium III	0	3.9E+02	5.1E+01	na	--	1.2E+03	1.7E+02	na	--	--	--	--	--	--	--	--	--	1.2E+03	1.7E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	4.9E+01	3.8E+01	na	--	--	--	--	--	--	--	--	--	4.9E+01	3.8E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene[C]	0	--	--	na	1.8E-02	--	--	na	7.9E-01	--	--	--	--	--	--	--	--	--	--	na	7.9E-01
Copper	0	8.7E+00	6.1E+00	na	--	2.7E+01	2.1E+01	na	--	--	--	--	--	--	--	--	--	2.7E+01	2.1E+01	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	6.8E+01	1.8E+01	na	2.0E+05	--	--	--	--	--	--	--	--	6.8E+01	1.8E+01	na	2.0E+05
DDD[C]	0	--	--	na	3.1E-03	--	--	na	1.4E-01	--	--	--	--	--	--	--	--	--	--	na	1.4E-01
DDE[C]	0	--	--	na	2.2E-03	--	--	na	9.7E-02	--	--	--	--	--	--	--	--	--	--	na	9.7E-02
DDT[C]	0	1.1E+00	1.0E-03	na	2.2E-03	3.4E+00	3.4E-03	na	9.7E-02	--	--	--	--	--	--	--	--	3.4E+00	3.4E-03	na	9.7E-02
Demeton	0	--	1.0E-01	na	--	--	3.4E-01	na	--	--	--	--	--	--	--	--	--	--	3.4E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	5.2E-01	5.8E-01	na	--	--	--	--	--	--	--	--	--	5.2E-01	5.8E-01	na	--
Dibenz(a,h)anthracene[C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	1.2E+01	--	--	--	--	--	--	--	--	--	--	na	1.2E+01
Dichlorobromomethane[C]	0	--	--	na	1.7E+02	--	--	na	7.5E+03	--	--	--	--	--	--	--	--	--	--	na	7.5E+03
1,2-Dichloroethane[C]	0	--	--	na	3.7E+02	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	8.7E+04	--	--	--	--	--	--	--	--	--	--	na	8.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	3.5E+03	--	--	--	--	--	--	--	--	--	--	na	3.5E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	6.6E+03	--	--	--	--	--	--	--	--	--	--	na	6.6E+03
1,3-Dichloropropene[C]	0	--	--	na	2.1E+02	--	--	na	9.3E+03	--	--	--	--	--	--	--	--	--	--	na	9.3E+03
Dieldrin[C]	0	2.4E-01	5.6E-02	na	5.4E-04	7.4E-01	1.9E-01	na	2.4E-02	--	--	--	--	--	--	--	--	7.4E-01	1.9E-01	na	2.4E-02
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	5.4E+05	--	--	--	--	--	--	--	--	--	--	na	5.4E+05
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.3E+07	--	--	--	--	--	--	--	--	--	--	na	1.3E+07
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	5.5E+04	--	--	--	--	--	--	--	--	--	--	na	5.5E+04
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	3.4E+03	--	--	--	--	--	--	--	--	--	--	na	3.4E+03
2,4-Dinitrotoluene[C]	0	--	--	na	3.4E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	6.2E-07	--	--	--	--	--	--	--	--	--	--	na	6.2E-07
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	8.8E+01	--	--	--	--	--	--	--	--	--	--	na	8.8E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	6.8E-01	1.9E-01	na	1.1E+03	--	--	--	--	--	--	--	--	6.8E-01	1.9E-01	na	1.1E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	6.8E-01	1.9E-01	na	1.1E+03	--	--	--	--	--	--	--	--	6.8E-01	1.9E-01	na	1.1E+03
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	6.8E-01	1.9E-01	--	--	--	--	--	--	--	--	--	--	6.8E-01	1.9E-01	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	2.6E-01	1.2E-01	na	7.3E-01	--	--	--	--	--	--	--	--	2.6E-01	1.2E-01	na	7.3E-01
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.7E+00	--	--	--	--	--	--	--	--	--	--	na	3.7E+00

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Fluorene	0	--	--	na	5.3E+03	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	3.4E-02	na	--	--	--	--	--	--	--	--	--	--	3.4E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	1.6E+00	1.3E-02	na	3.5E-02	--	--	--	--	--	--	--	--	1.6E+00	1.3E-02	na	3.5E-02
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	3.9E-04	1.6E+00	1.3E-02	na	1.7E-02	--	--	--	--	--	--	--	--	1.6E+00	1.3E-02	na	1.7E-02
Hexachlorobenzene [C]	0	--	--	na	2.9E-03	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorobutadiene [C]	0	--	--	na	1.8E+02	--	--	na	7.9E+03	--	--	--	--	--	--	--	--	--	--	na	7.9E+03
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	4.9E-02	--	--	na	2.2E+00	--	--	--	--	--	--	--	--	--	--	na	2.2E+00
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	1.7E-01	--	--	na	7.5E+00	--	--	--	--	--	--	--	--	--	--	na	7.5E+00
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	1.8E+00	2.9E+00	--	na	7.9E+01	--	--	--	--	--	--	--	--	2.9E+00	--	na	7.9E+01
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	na	1.3E+04
Hexachloroethane [C]	0	--	--	na	3.3E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	6.8E+00	na	--	--	--	--	--	--	--	--	--	--	6.8E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	7.9E+00	--	--	--	--	--	--	--	--	--	--	na	7.9E+00
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone [C]	0	--	--	na	9.6E+03	--	--	na	4.2E+05	--	--	--	--	--	--	--	--	--	--	na	4.2E+06
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	6.6E+01	7.5E+00	na	--	2.0E+02	2.6E+01	na	--	--	--	--	--	--	--	--	--	2.0E+02	2.6E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	3.4E-01	na	--	--	--	--	--	--	--	--	--	--	3.4E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	4.3E+00	2.6E+00	--	--	--	--	--	--	--	--	--	--	4.3E+00	2.6E+00	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.8E+04	--	--	--	--	--	--	--	--	--	--	na	1.8E+04
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	2.6E+05	--	--	--	--	--	--	--	--	--	--	na	2.6E+05
Methoxychlor	0	--	3.0E-02	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.2E+02	1.4E+01	na	4.6E+03	3.8E+02	4.7E+01	na	5.6E+04	--	--	--	--	--	--	--	--	3.8E+02	4.7E+01	na	5.6E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	8.4E+03	--	--	--	--	--	--	--	--	--	--	na	8.4E+03
N-Nitrosodimethylamine [C]	0	--	--	na	3.0E+01	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
N-Nitrosodiphenylamine [C]	0	--	--	na	6.0E+01	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
N-Nitrosodi-n-propylamine [C]	0	--	--	na	5.1E+00	--	--	na	2.2E+02	--	--	--	--	--	--	--	--	--	--	na	2.2E+02
Nonylphenol	0	2.8E+01	6.6E+00	--	--	5.6E+01	2.3E+01	na	--	--	--	--	--	--	--	--	--	8.6E+01	2.3E+01	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	2.0E-01	4.4E-02	na	--	--	--	--	--	--	--	--	--	2.0E-01	4.4E-02	na	--
PCB Total [C]	0	--	1.4E-02	na	6.4E-04	--	4.8E-02	na	2.8E-02	--	--	--	--	--	--	--	--	--	4.8E-02	na	2.8E-02
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	2.4E-02	2.0E-02	na	1.3E+03	--	--	--	--	--	--	--	--	2.4E-02	2.0E-02	na	1.3E+03
Phenol	0	--	--	na	8.6E+05	--	--	na	1.0E+07	--	--	--	--	--	--	--	--	--	--	na	1.0E+07
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.9E+04	--	--	--	--	--	--	--	--	--	--	na	4.9E+04
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.9E+01	--	--	--	--	--	--	--	--	--	--	na	4.9E+01
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	6.1E+01	1.7E+01	na	5.1E+04	--	--	--	--	--	--	--	--	**6.1E+01**	**1.7E+01**	na	**5.1E+04**
Silver	0	1.5E+00	--	na	--	4.7E+00	--	na	--	--	--	--	--	--	--	--	--	**4.7E+00**	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	--	--	na	**1.8E+03**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	**1.5E+03**
Thallium	0	--	--	na	4.7E-01	--	--	na	5.7E+00	--	--	--	--	--	--	--	--	--	--	na	**5.7E+00**
Toluene	0	--	--	na	6.0E+03	--	--	na	7.3E+04	--	--	--	--	--	--	--	--	--	--	na	**7.3E+04**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	2.2E+00	6.8E-04	na	1.2E-01	--	--	--	--	--	--	--	--	**2.2E+00**	**6.8E-04**	na	**1.2E-01**
Tributyltin	0	4.6E-01	7.2E-02	na	--	1.4E+00	2.5E-01	na	--	--	--	--	--	--	--	--	--	**1.4E+00**	**2.5E-01**	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	**8.5E+02**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	**7.1E+03**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	na	**1.3E+04**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	**1.1E+03**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	**1.1E+03**
Zinc	0	7.9E+01	8.0E+01	na	2.6E+04	2.4E+02	2.7E+02	na	3.2E+05	--	--	--	--	--	--	--	--	**2.4E+02**	**2.7E+02**	na	**3.2E+05**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	7.8E+03
Arsenic	3.1E+02
Barium	na
Cadmium	1.6E+00
Chromium III	1.0E+02
Chromium VI	2.0E+01
Copper	1.1E+01
Iron	na
Lead	1.5E+01
Manganese	na
Mercury	1.6E+00
Nickel	2.8E+01
Selenium	1.0E+01
Silver	1.9E+00
Zinc	9.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

South Fork Catoctin Creek
Station: 1aSOC001.66 (June 2003 - November 2011)

Collection Date Time	Temp Celcius	Field pH
7/15/03 12:35	21.65	7.24
9/4/03 13:40	22.04	7
6/29/04 13:35	23.55	7.94
7/8/04 12:30	24.83	7.64
9/15/04 13:45	20.89	7.4
10/27/04 13:00	13.28	7.91
11/15/04 14:00	7.34	7.45
6/21/05 12:20	21.53	7.74
6/11/08 10:23	22.7	7.1
7/30/08 10:24	24.4	7.4
8/26/08 10:40	22.3	7.3
9/29/08 9:31	19.2	7.2
10/20/08 10:50	8.8	7.2
11/18/08 10:40	5.8	7.8
6/15/10 10:30	23.9	7.4
7/27/10 11:30	25.3	7.6
9/27/10 11:05	19.7	7
11/30/10 11:43	5.2	8.3
6/6/11 10:58	21.2	8.1
8/10/11 10:46	24.8	7.3
11/17/11 10:00	10.5	7.2
90th Percentile	24.8°C	7.94

South Fork Catoctin Creek
Station: 1aSOC001.66 (December 2005 - May 2011)

Collection Date Time	Temp Celcius	Field Ph
1/19/05 12:00	0.03	7.16
3/15/05 13:00	5.49	8.25
5/23/05 12:30	18.91	7.81
1/14/08 10:22	4.4	7.3
2/19/08 11:03	5.1	7.6
3/18/08 10:28	8.5	8.1
4/30/08 10:27	11.8	7.3
5/20/08 10:45	12.4	7.2
12/16/08 10:38	7.6	7.1
1/12/10 12:40	0.7	7.3
3/24/10 13:20	11	7.7
5/26/10 12:10	20.3	7.5
2/14/11 10:30	2.6	7
4/27/11 9:35	18.4	7
90th Percentile	18.8°C	8

Attachment 5

Waterford WWTP Effluent Temperature and pH Data January 2010 - July 2013

Month/ Year	Day	Temp °C	pH
Jan-10	1		
	2		
	3	1.3	7.3
	4	0.5	7
	5	0.6	7.2
	6	0.5	7.3
	7	0.5	7.4
	8		
	9		
	10	0.7	7.5
	11	0.7	7.2
	12	0.5	7.3
	13	0.4	7.4
	14		
	15		
	16		
	17		
	18		
	19	1.5	7.3
	20	1.6	7.3
	21	1.7	7.4
	22	1.8	7.4
	23		
	24		
	25	3.1	7.4
	26	3.9	7.6
	27	3.6	7.3
	28	3.7	7.5
	29	2.7	7.2
	30		
	31		
Feb-10	1	1.8	7.7
	2	1.1	7.6
	3	1.1	7.1
	4	1.2	7.5
	5	1.1	7.4
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		

Month/ Year	Day	Temp °C	pH
Feb-10	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22	1.2	7.4
	23	1	7.2
	24	1.1.	7.3
	25	1.5	7.3
	26	1.1	7.2
	27		
	28		
Mar-10	1	2.4	7.8
	2	2.9	7.4
	3	4.2	7.4
	4	3.4	7.3
	5	3.8	7.5
	6		
	7		
	8	4.2	7.8
	9	6.2	7.2
	10	7.3	7.2
	11	8.2	7.5
	12	9.6	7.4
	13		
	14		
	15	9	7.6
	16	9.3	7.5
	17	10.1	7.4
	18	10.8	7.4
	19	11.5	7.5
	20		
	21		
	22	10.6	7.8
	23	13.9	7.5
	24	12.4	7.7
	25	12.9	7.3
	26	12.9	7.4
	27		
	28		
	29	10.7	7.7
	30	11.7	7.8
	31	10.9	7.8

Month/ Year	Day	Temp °C	pH
Apr-10	1	11.2	7.6
	2	13.1	7.6
	3		
	4		
	5	13.4	7.4
	6	17.5	6.9
	7	19.1	7.3
	8	20	7.3
	9	18.9	7.2
	10		
	11		
	12	15.6	7.3
	13	17.9	7
	14	16.4	6.9
	15	16.2	7
	16	17.2	7
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26	14.9	6.7
	27	16.4	6.2
	28	16	6.2
	29	14.9	6.2
	30	15.8	7.5
May-10	1		
	2		
	3	19.9	7
	4	21.9	6.5
	5	22.3	6.2
	6	23	6.5
	7	22.8	7.1
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		

Month/ Year	Day	Temp °C	pH
May-10	16		
	17	16.6	7
	18	19.9	6.7
	19	18.6	6.5
	20	18.2	6.7
	21	19.2	6.8
	22		
	23		
	24	20.1	6.5
	25	21.6	6.6
	26	22.3	6.6
	27	23.3	6.7
	28	24.6	7
	29		
	30		
	31		
Jun-10	1		
	2		
	3		
	4		
	5		
	6		
	7	20.2	7.2
	8	23.5	7
	9	23.8	7.2
	10	23	7.1
	11	23.2	7.2
	12		
	13		
	14	24.2	7.1
	15	25.8	7.1
	16	25.4	7.1
	17	25	7.2
	18	25.2	7
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		

Month/ Year	Day	Temp °C	pH
Jul-10	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12	26.6	7.1
	13	25.6	7
	14	25.7	7
	15	26.2	7
	16	26.5	7
	17		
	18		
	19	26.4	7.2
	20	226.9	7
	21	27	7.2
	22	27.1	7
	23	27.2	6.9
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Aug-10	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		

Month/ Year	Day	Temp °C	pH
Aug-10	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Sep-10	1		
	2		
	3		
	4		
	5		
	6		
	7	21	7.3
	8	22.8	7
	9	23	7
	10	23.1	7
	11		
	12		
	13	20.9	7.2
	14	21.1	7.3
	15	21	7.2
	16	21	7.2
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
Oct-10	1		
	2		

Month/ Year	Day	Temp °C	pH
Oct-10	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18	14.9	7.6
	19	14.9	7.4
	20	14.2	7.2
	21	14.4	7.3
	22	14.2	7.3
	23		
	24		
	25	13.9	7.2
	26	14.9	7.2
	27	115.9	7
	28	15.6	7.2
	29	15.7	7.3
	30		
	31		
Nov-10	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15	9	7.2
	16	9.4	7.3
	17	10	7.3
	18	10.2	7.4

Month/ Year	Day	Temp °C	pH
Nov-10	19	9.8	7.3
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
Dec-10	1		
	2		
	3		
	4		
	5		
	6	3.7	7.5
	7	2.7	7.4
	8	2.5	7.5
	9	1.5	7.6
	10	1.5	7.8
	11		
	12		
	13	3	7.5
	14	1	7.7
	15	0.6	7.8
	16	0.8	7.8
	17	0.6	7.8
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Jan-11	1		
	2		
	3		
	4		

Month/ Year	Day	Temp °C	pH
Jan-11	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Feb-11	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		

Month/ Year	Day	Temp °C	pH
Feb-11	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
Mar-11	1		
	2		
	3		
	4		
	5		
	6		
	7	6.8	8.3
	8	6.8	7.5
	9	7.2	7.1
	10	7.3	7.4
	11	7.9	7.9
	12		
	13		
	14	7.3	7.4
	15	7.8	7
	16	8.9	6.8
	17	9.5	7.1
	18	10.6	7.3
	19		
	20		
	21	10.1	7.1
	22	12.8	6.8
	23	13.4	6.8
	24	12.2	6.9
	25	11	7
	26		
	27		
	28	8.9	7
	29	8.8	7.1
	30	9	6.9
	31	8.8	7
Apr-11	1	8.4	7.0
	2		
	3		
	4		
	5		
	6		
	7		
	8		

Month/ Year	Day	Temp °C	pH
Apr-11	9		
	10		
	11	11.5	7.0
	12	14.8	7.0
	13	15.1	6.9
	14	14.8	7.3
	15	15.1	7.1
	16		
	17		
	18		
	19	13.1	7.3
	20	14.6	7.2
	21	15.6	7.3
	22	15.0	7.2
	23		
	24		
	25	15.9	7.2
	26	16.8	7.0
	27	18.4	7.1
	28	21.5	7.0
	29		
	30		
May-11	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9	16.1	7.5
	10	18,6	6.9
	11	19.5	6.9
	12	20.1	7.1
	13	21.4	7.0
	14		
	15		
	16	19.0	7.2
	17	20.1	6.8
	18	20.7	6.8
	19	20.8	7.2
	20	20.8	6.8
	21		
	22		
	23	21.3	7.0
	24	23.1	7.1
	25	23.6	7.6

Month/ Year	Day	Temp °C	pH
May-11	26	24.3	6.8
	27	25.3	7.0
	28		
	29		
	30		
	31	24.7	7.0
Jun-11	1	26.6	7.1
	2	27.2	7.1
	3	26.8	7.2
	4		
	5		
	6	24.1	7.1
	7	24.4	7.1
	8	24.7	7.0
	9	25.0	7.1
	10	25.2	7.1
	11		
	12		
	13	25.0	7.2
	14	24.9	7.4
	15	23.9	7.2
	16	23.6	7.2
	17	23.4	7.1
	18		
	19		
	20	24.7	7.0
	21	24.2	7.2
	22	24.6	7.1
	23	24.9	6.9
	24	25.0	7.1
	25		
	26		
	27	24.8	7.0
	28	24.6	7.2
	29	24.6	7.1
	30	24.7	7.0
Jul-11	1	25.1	7.2
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		

Month/ Year	Day	Temp °C	pH
Jul-11	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Aug-11	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		

Month/ Year	Day	Temp °C	pH
Aug-11	28		
	29		
	30		
	31		
Sep-11	1		
	2		
	3		
	4		
	5		
	6	22.7	7.2
	7	21.7	7.2
	8	21.1	7.1
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26	19.6	7.0
	27	19.1	6.9
	28	19.4	6.8
	29	19.4	7.0
	30	19.6	6.9
Oct-11	1		
	2	17.7	7
	3	15.4	7.2
	4	15.2	7.2
	5		
	6	15.4	7.6
	7		
	8		
	9		
	10		
	11	15.3	7.7
	12	15.5	7.2
	13	16.0	7.1

Month/ Year	Day	Temp °C	pH
Oct-11	14	15.0	7.0
	15		
	16		
	17	15.3	6.2
	18	15.5	7.1
	19	16.1	7.2
	20	16.5	6.8
	21	15.6	6.8
	22		
	23		
	24	14.1	7.1
	25	13.9	7.2
	26	13.5	7.5
	27	13.7	7.2
	28	13.1	6.9
	29		
	30		
	31	10.8	7.0
Nov-11	1	9.4	7.2
	2	9.4	7.2
	3	9.4	7.2
	4	9.7	7.1
	5		
	6		
	7		
	8	9.1	7.2
	9	9.4	7.2
	10	9.9	7.2
	11		
	12		
	13		
	14	9.2	7.3
	15	9.5	7.3
	16	10.0	7.2
	17	10.1	7.2
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		

Month/ Year	Day	Temp °C	pH
Nov-11	30		
Dec-11	1		
	2		
	3		
	4		
	5		
	6	8.2	7.4
	7	8.9	7.3
	8	8.3	7.8
	9	7.4	7.2
	10		
	11		
	12	6.3	7.5
	13	5.1	7.3
	14	5.2	7.2
	15	5.4	7.3
	16	5.9	7.2
	17		
	18		
	19		
	20	6.0	7.7
	21	5.3	7.7
	22	5.7	7.7
	23	6.5	7.7
	24		
	25		
	26		
	27	6.2	7.7
	28	5.3	7.3
	29		
	30		
	31		
Jan-12	1		
	2		
	3	5.4	7.6
	4	2.1	7.4
	5	1.9	7.3
	6	2.1	7.3
	7		
	8		
	9	3.4	7.4
	10	3.3	7.3
	11	3.6	7.3
	12	3.7	7.2
	13	4.8	7.2
	14		
	15		

Month/ Year	Day	Temp °C	pH
Jan-12	16		
	17	4.2	7.3
	18	3.7	7.3
	19	3.0	7.4
	20	3.1	7.3
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30	5.3	7.7
	31	4.8	7.2
Feb-12	1	5.5	7.1
	2	6.1	7.1
	3	6.0	7.3
	4		
	5		
	6	5.4	7.7
	7	5.4	8.0
	8	5.8	7.1
	9	5.2	7.1
	10	5.3	7.1
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21	5.9	7.7
	22	6.1	7.3
	23	6.8	7.8
	24	8.1	7.3
	25		
	26		
	27	8.1	7.5
	28	8.6	6.8
	29	8.3	6.9
Mar-12	1		
	2		

Month/ Year	Day	Temp °C	pH
Mar-12	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Apr-12	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		

Month/ Year	Day	Temp °C	pH
Apr-12	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
May-12	1	13.4	7.4
	2	16.9	7.3
	3	17.9	7.3
	4	20.1	7.3
	5	20.8	7.2
	6	21.7	7.2
	7	21.4	7.2
	8	20.8	7.4
	9	20.6	7.2
	10	20.4	7.3
	11	19.5	7.2
	12		
	13		
	14		
	15	18.0	7.2
	16	21.1	7.2
	17	22.0	7.4
	18	22.5	7.5
	19		
	20		
	21	21.3	7.3
	22	23.6	7.4
	23	23.5	7.5
	24	24.0	7.3
	25	21.5	7.3
	26		
	27		
	28		
	29		
	30		
	31		
Jun-12	1		
	2		
	3		
	4	23.5	7.4

Month/ Year	Day	Temp °C	pH
Jun-12	5	23.8	7.4
	6	23.8	7.3
	7	23.5	7.3
	8	23.5	7.3
	9		
	10		
	11	23.8	7.2
	12	25.8	7.1
	13	25.4	7.2
	14	25.1	7.6
	15	25.3	7.8
	16		
	17		
	18	22.5	7.6
	19	24.3	7.9
	20	25.2	7.1
	21	26.4	7.2
	22	27.1	7.3
	23		
	24		
	25	24.9	7.4
	26	26.3	7.7
	27	25.4	7.6
	28	25.2	7.5
	29	25.7	7.3
	30		
Jul-12	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9	25.5	7.2
	10	28.5	7.5
	11	28.9	7.4
	12	28.7	7.7
	13	28.3	7.7
	14		
	15		
Jul-12	16	24.6	8.3
	17	27.9	7.6
	18	28.4	7.5
	19	28.6	7.4
	20	29.0	7.4
	21		

Month/ Year	Day	Temp °C	pH
Jul-12	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Aug-12	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Sep-12	1		
	2		
	3		
	4		
	5		
	6		

Month/ Year	Day	Temp °C	pH
Sep-12	7		
	8		
	9		
	10	20.8	7.8
	11	22.5	7.4
	12	22.1	7.4
	13	21.9	7.8
	14	21.9	7.2
	15		
	16		
	17	20.0	7.6
	18	21.2	7.3
	19	19.1	8.1
	20	20.2	7.3
	21	20.0	7.1
	22		
	23		
	24	19.1	7.1
	25	19.1	7.2
	26	19.2	7.2
	27	19.9	7.2
	28		
	29		
	30		
Oct-12	1	18.4	7.2
	2	19.0	7.2
	3	19.0	7.2
	4	19.7	7.3
	5		
	6		
	7		
	8		
	9	16.5	7.2
	10	16.1	7.0
	11	16.0	7.4
	12	15.2	7.2
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22	13.8	8.1
	23	14.3	7.2

Month/ Year	Day	Temp °C	pH
Oct-12	24	14.8	7.4
	25	15.6	7.2
	26	16.1	7.2
	27		
	28		
	29		
	30		
	31		
Nov-12	1		
	2		
	3		
	4		
	5		
	6	11.0	7.7
	7	9.0	7.1
	8	8.5	7.3
	9	7.9	7.2
	10		
	11		
	12		
	13	9.2	7.3
	14	9.0	7.1
	15	8.4	7.0
	16	9.0	7.2
	17		
	18		
	19		
	20		
Nov-12	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
Dec-12	1		
	2		
	3	8.1	6.6
	4	6.4	6.9
	5	7.5	7.1
	6	7.3	7.1
	7		
	8		
	9		

Month/ Year	Day	Temp °C	pH
Dec-12	10	8.4	7.4
	11	8.4	7.0
	12	7.9	7.0
	13	7.6	6.8
	14	6.8	7.3
	15		
	16		
	17		
	18	7.5	7.2
	19	7.2	7.2
	20	7.3	7.2
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Jan-13	1		
	2		
	3		
	4		
	5		
	6		
Jan-13	7		
	8	5.8	7.5
	9	3.7	6.8
	10	3.9	7.1
	11	3.9	7.3
	12		
	13		
	14	5.6	7.7
	15	6.6	6.5
	16	5.7	7.9
	17	5.8	7.6
	18	5.2	7.0
	19		
	20		
	21		
	22		
	23		
	24		
	25		

Month/ Year	Day	Temp °C	pH
Jan-13	26		
	27		
	28		
	29		
	30		
	31		
Feb-13	1		
	2		
	3		
	4	4.1	7.2
	5	2.2	7.5
	6	2.4	7.8
	7	2.7	7.3
	8	2.9	7.3
	9		
	10		
	11	3.6	7.7
	12	3.8	7.1
	13	4.4	7.1
	14	4.3	7.1
	15	5.1	6.9
	16		
	17		
	18		
	19	4.2	7.0
	20	3.4	7.5
	21	2.6	7.5
	22	2.7	7.9
	23		
	24		
	25	3.4	7.5
	26	4.3	7.2
	27	4.3	7.3
	28	5.6	7.7
Mar-13	1	5.5	7.5
	2		
	3		
	4	4.9	7.3
	5	4.7	7.2
	6	5.3	6.8
	7	4.5	7.6
	8	4.5	7.3
	9		
	10		
	11	5.8	8.0
	12	7.3	7.2
	13	8.3	7.1

Month/ Year	Day	Temp °C	pH
Mar-13	14	7.5	7.3
	15	7.2	7.4
	16		
	17		
	18	0.9	7.3
	19	6.9	6.9
	20	7.3	6.9
	21	7.3	7.4
	22	6.2	7.3
	23		
	24		
	25	6.0	7.8
	26	6.8	7.2
	27	7.7	7.3
	28	7.8	7.1
	29	7.6	6.9
	30		
	31		
Apr-13	1	7.5	7.1
	2	9.0	7.2
	3	9.3	6.7
	4	9.2	7.2
	5	9.4	7.2
	6		
	7		
	8	11.1	7.0
	9	13.4	7.2
	10	15.3	7.3
Apr-13	11	17.3	6.9
	12		
	13		
	14		
	15	14.5	7.0
	16	17.4	7.1
	17	18.2	6.9
	18	18.9	7.0
	19		
	20		
	21		
	22	14.4	7.2
	23	16.7	7.2
	24	16.2	6.7
	25	16.8	7.2
	26	16.9	7.3
	27		
	28		
	29	15.0	7.1

Month/ Year	Day	Temp °C	pH
Apr-13	30	16.9	7.0
May-13	1	16.8	7.1
	2	17.9	7.1
	3	18.5	7.1
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13	15.2	7.0
	14	17.7	6.9
	15	18.2	7.0
	16	19.4	6.8
	17	19.9	7.0
	18		
	19		
	20	18.7	6.7
	21	21.9	7.0
	22	23.3	6.9
	23	24.0	7.0
	24	23.3	7.1
	25		
	26		
	27		
	28		
	29		
	30		
	31		
Jun-13	1		
	2		
	3	19.2	8.3
	4	14.7	6.8
	5	24.5	6.5
	6	24.9	6.9
	7	23.8	6.8
	8		
	9		
	10	22.5	6.9
	11	23.5	6.8
	12	24.5	6.7
	13	25.5	6.9
	14		
	15		

Month/ Year	Day	Temp °C	pH
Jun-13	16		
	17	23.2	7.0
	18	24.8	6.7
	19	24.5	6.8
	20	24.6	6.7
	21	24.6	6.8
	22		
	23		
	24	21.8	7.7
	25	25.7	6.6
	26	26.4	6.6
	27	26.6	6.7
	28	26.6	6.9
	29		
	30		
Jul-13	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
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	18		
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	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		

90th Percentile for June - November

Temperature = 26.6°C

pH = 7.6 SU

90th Percentile for December - May

Temperature = 21.1°C

pH = 7.7 SU

South Fork Catcotin Creek
Station: 1aSOC001.66 Total Hardness
September 1990 - May 2001

Date and Time	Total Hardness mg/L
09/27/1990 11:45	84
01/10/1991 12:40	88
04/10/1991 09:50	64
07/09/1991 11:15	59
07/10/1991 11:15	62
11/20/1991 11:00	76
01/15/1992 11:00	60
04/01/1992 10:11	58
07/16/1992 13:05	70
10/26/1992 10:36	84
01/13/1993 11:00	63
04/19/1993 10:17	54
07/19/1993 10:37	72
10/26/1993 12:00	78
01/13/1994 10:48	56
04/14/1994 10:30	56
07/07/1994 11:18	70
10/12/1994 11:00	74
01/26/1995 10:00	62
04/27/1995 11:00	63
07/31/1995 10:25	76
10/19/1995 10:11	73
02/20/1996 11:00	64
04/04/1996 10:10	64
07/18/1996 10:20	69
11/14/1996 10:53	63
02/27/1997 10:15	63.7
05/01/1997 10:22	70.7
08/28/1997 09:55	75.1
02/19/1998 10:30	54
12/02/1998 10:45	75
02/18/1999 12:10	120
04/01/1999 12:55	98
07/15/1999 11:15	69.8
09/21/1999 10:10	75.7
11/18/1999 11:10	66.1
11/30/2000 12:10	70.3
01/30/2001 10:30	57.4
03/13/2001 10:35	51
05/03/2001 10:45	43

Average Hardness 68.795

Attachment 6

Crowther, Joan (DEQ)

From: Aschenbach, Ernie (DGIF)
Sent: Wednesday, July 31, 2013 10:46 AM
To: Crowther, Joan (DEQ); Daub, Elleanore (DEQ); nhreview (DCR); 'Troy Andersen'
Cc: ProjectReview (DGIF); Cason, Gladys (DGIF)
Subject: ESSLog 33960; VPDES DEQ# VA-0060500 re-issuance for the Waterford Waste Water Treatment Plant in Loudoun County, VA

We have reviewed the VPDES re-issuance for the above-referenced facility. The receiving stream is South Fork Catoctin Creek. The receiving stream has a 7Q10 (low-flow) of 0.14 million gallons per day (MGD) and (high-flow) of 1.6 MGD. According to the Effluent characteristics, the Ammonia as Nitrogen (monthly-average) is 14 mg/L, and (weekly-average) is 21 mg/L. Total residual chlorine (TRC) monthly- and weekly-average after dechlorination is 0.030 mg/l.

According to our records, South Fork Catoctin Creek is a headwater tributary to Catoctin Creek designated Threatened and Endangered (T&E) species water for the state Threatened (ST) wood turtle and ST green floater mussel. South Fork Catoctin Creek is also predicted habitat for the ST green floater.

In order to protect aquatic resources, we generally recommend ultraviolet (UV) disinfection rather than chlorination disinfection. If chlorination becomes necessary and is used, we recommend and support continued dechlorination, prior to discharge. The ammonia limits proposed within the EPA rule are expressed on the basis of total ammonia-nitrogen (TAN). The proposed EPA ammonia limit for waters with mussels (not T&E mussels, any mussel species) is:

- CMC (Criterion Maximum Concentration or acute) - 2.9 mg N/L (at pH 8 and 25C)
- CCC (Criterion Continuous Concentration or chronic) - 0.26 mg N//L (at pH 8 and 25C) with a 4-day average within the 30 day average period no higher than 2.5 the CCC, which would be 0.65 mg N/L.

The ammonia limits proposed within the EPA rule are the best information currently available regarding ammonia levels protective of mussels. Therefore, we recommend and support the EPA values being implemented in this permit for this and all future VPDES permits. Provided the project adheres to the effluent limitations and monitoring requirements specified in the permit, we do not anticipate the re-issuance of this existing permit to result in adverse impact to designated T&E species waters or their associated species.

This project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species. Therefore, we recommend and support coordination with VDCR-DNH regarding the protection of these resources. We also recommend contacting the USFWS regarding all federally listed species.

Thank you for the opportunity to provide comments. Please call me if you have any questions.

Ernie Aschenbach
Environmental Services Biologist
Virginia Dept. of Game and Inland Fisheries
P.O. Box 11104
4010 West Broad Street
Richmond, VA 23230
Phone: (804) 367-2733
FAX: (804) 367-2427
Email: Ernie.Aschenbach@dgif.virginia.gov

Attachment 7

11/25/2013 10:58:59 AM

Facility = Waterford (June - November)
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 26.2
WLAc = 8.69
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 17.5335531117877
Average Weekly limit = 17.5335531117877
Average Monthly LImit = 11.9881412581154

The data are:

9

11/25/2013 10:58:11 AM

Facility = Waterford (December -May)
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 175
WLAc = 91.9
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

Mixing Zone Predictions for Waterford

June - November

Slope
elevation 350-340 ft
distance .94 miles

Effluent Flow = 0.058 MGD
Stream 7Q10 = 0.14 MGD
Stream 30Q10 = .28 MGD
Stream 1Q10 = 0.12 MGD
Stream slope = .002 ft/ft
Stream width = 15 ft
Bottom scale = 3
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .1316 ft
Length = 1151.58 ft
Velocity = .1551 ft/sec
Residence Time = .086 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .1821 ft
Length = 874.21 ft
Velocity = .1915 ft/sec
Residence Time = .0528 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .1236 ft
Length = 1213.73 ft
Velocity = .1487 ft/sec
Residence Time = 2.268 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 44.09% of the 1Q10 is used.

Mixing Zone Predictions for Waterford high flows
(December - May)

Slope
elevation 350-340 ft
distance 0.94 miles

Effluent Flow = 0.058 MGD
Stream 7Q10 = 1.6 MGD
Stream 30Q10 = 2.8 MGD
Stream 1Q10 = 1.1 MGD
Stream slope = .002 ft/ft
Stream width = 15 ft
Bottom scale = 3
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .4801 ft
Length = 379.93 ft
Velocity = .3564 ft/sec
Residence Time = .0123 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .6719 ft
Length = 282.61 ft
Velocity = .4389 ft/sec
Residence Time = .0075 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .3852 ft
Length = 460.13 ft
Velocity = .3102 ft/sec
Residence Time = .412 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

Facility = Waterford
Chemical = Total Residual Chlorine
Chronic averaging period = 4
WLAa = 36
WLAc = 38
Q.L. = 100
# samples/mo. = 90
# samples/wk. = 23

Summary of Statistics:

observations = 1
Expected Value = 200
Variance = 14400
C.V. = 0.6
97th percentile daily values = 486.683
97th percentile 4 day average = 332.758
97th percentile 30 day average= 241.210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 36
Average Weekly limit = 18.5574819741015
Average Monthly LImit = 16.5539762328594

The data are:

200

Shr file

Commonwealth of Virginia

STATE WATER CONTROL BOARD

P. O. Box 11143, 2111 N. Hamilton St., Richmond, Va. 23230 (804) 770-2241

Please Reply To: *Northern Virginia Regional Office*
P. O. Box 307
Springfield, Virginia 22150

5515 Cherokee Avenue, Suite 404
Alexandria, Virginia 22312
(703) 750-9111

Potomac Basin

Loudoun Co.

October 23, 1973

Lac 6/2/93

90% BOD removal

Charlie,

According to my calculations, 24 mg/l in the final effluent will not be sufficient. 91% is marginal. 92% works out. Give me a call this afternoon if you wish to discuss this. *

19.2 mg/L 6/2/93 Lac

Gary

Gary

South Fork Catoctin Creek at the Route 662 Bridge

Depth 6"-24"
Width 25 ft.
Flow 1 ft. per 5 sec.
Air Temp. 23°c
Water Temp. 50°f
DO. 7.7 mg/l

GNM/rd

* Although the model indicates an effluent limitation of 19.2 mg/l BOD_5, the permit was issued with a BOD_5 effluent limitation of 24 mg/l.

The effluent limitation of 24 mg/l has not degraded water quality in the receiving stream and will remain in the permit. 6/2/93 Lac

Attachment 10

IEMORANDUM

State Water Control Board
2111 North Hamilton Street P. O. Box 11143 Richmond, VA. 2323

SUBJECT: Waterford STP SAA

TO:

FROM: John McClain and Gary Moore

DATE: October 23, 1973

COPIES:

D.A. above POD on South Fork = 27.56 $mi.^2$
D.A. of North Fork above the confluence of North Fork and South Fork = 18.15 $mi.^2$
D.A. between POD and confluence of North and South Forks of Catoctin Creek=.91 $mi.^2$

Critical discharge = .007 cfs/sq.mi. (Goose Creek near Leesburg)

*Q of South Fork Catoctin Creek at POD = .1244 MGD
Q of North Fork at confluence with South Fork =.0819 MGD
Q of South Fork between POD and confluence of North and South Forks =.0041 MGD

Distance from POD to confluence of North and South Forks = 1.2 mi.
Slope between POD to confluence of North and South Forks = 10/6336 = .0015 ft/ft

Velocity of Catoctin Creek = .2 ft. $sec.^{-1}$

Ka_{30} South Fork = Ka_{20} * 1.22 = 1.5 * 1.22 = 1.83 day^{-1}

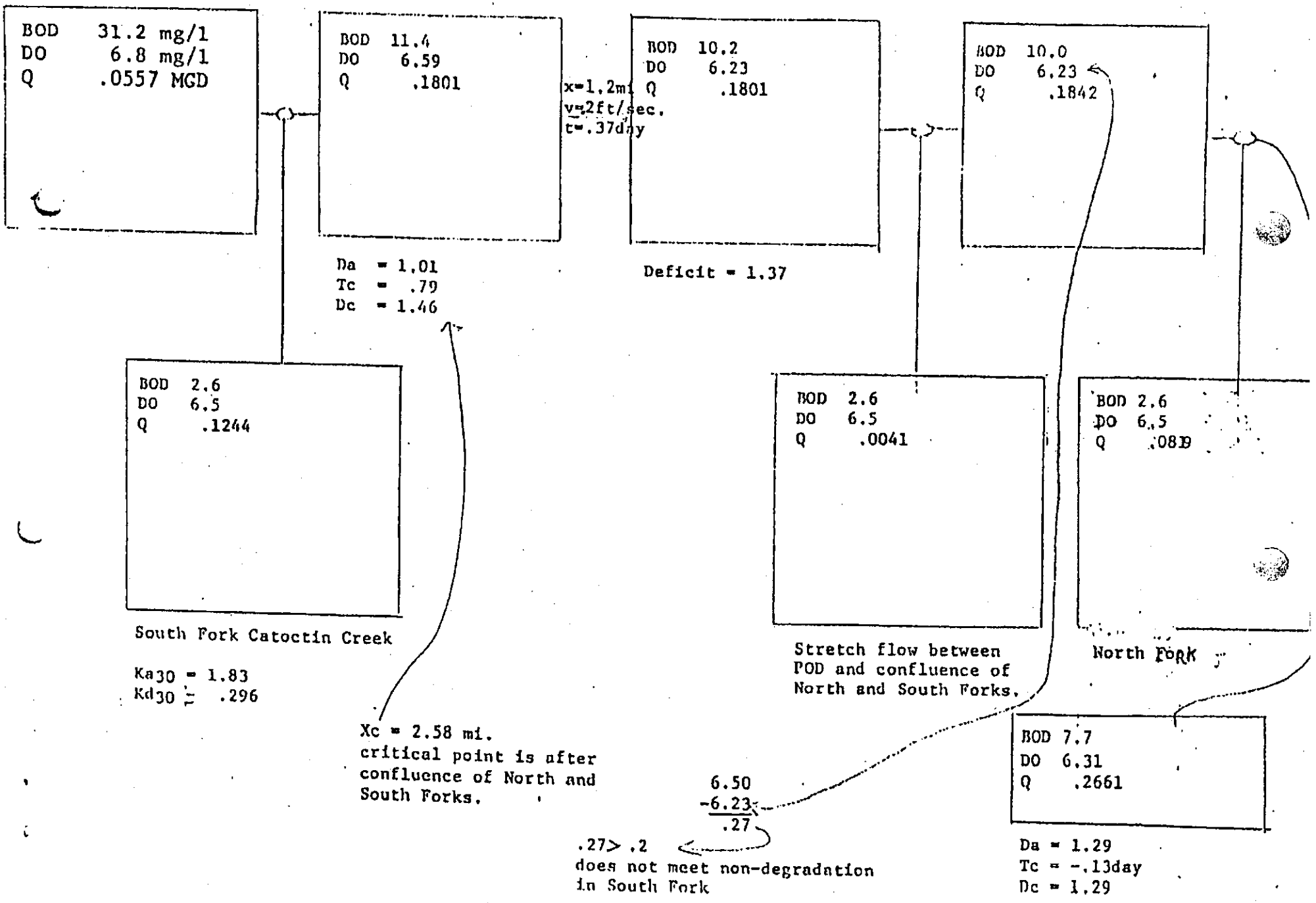
$Kd_{30} = Kd_{20}$ * 1.48 = 2 * 1.48 = .296 day^{-1}

* 7Q10 = 0.1244 MGD. The new 7Q10 (1993) is 0.37 MGD.

GM:by

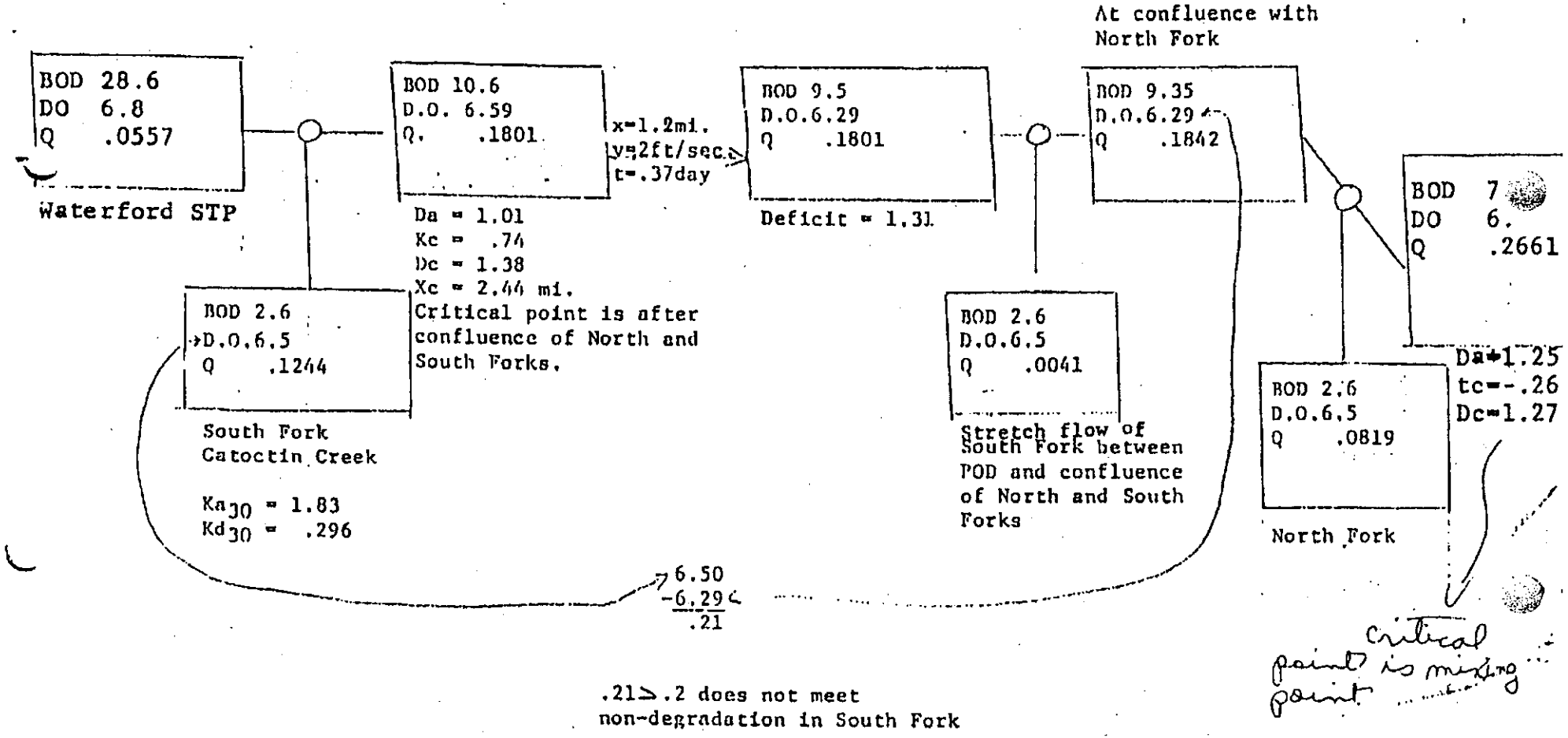
90% BOD Removal= 24mg/l
90% D.O. Saturation in effluent

FLOW DIAGRAM FOR WATERFORD STP PROPOSAL



91% Removal=22mg/l BOD
90% D.O. Saturation=6.8mg/l

WATERFORD STP

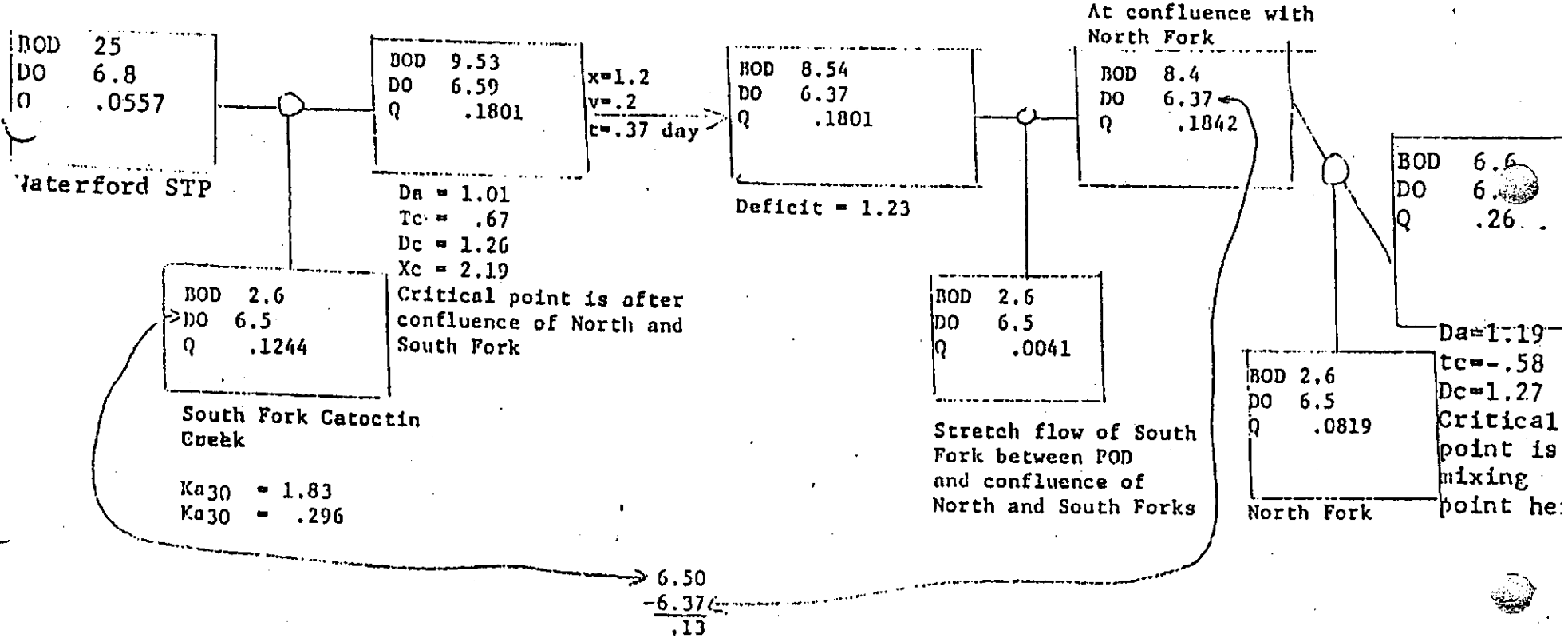


.21≥.2 does not meet non-degradation in South Fork

92% Removal=19.2 mg/l BOD in effluent

90% DO Saturation in effluent 6.8mg/l

WATERFORD STP



meets non-degradation in South Fork.

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

PUBLIC COMMENT PERIOD: January 8, 2014 to February 7, 2014

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Loudoun County Sanitation Authority, d/b/a Loudoun Water, P. O. Box 4000, Ashburn, VA 20146, VA0060500

PROJECT DESCRIPTION: Loudoun County Sanitation Authority, d/b/a Loudoun Water has applied for a reissuance of a permit for the public Waterford Wastewater Treatment Plant. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 58,000 gallons per day into a water body. Sludge from the treatment process is digested anaerobically in the lagoons. The facility proposes to release the treated sewage in the South Fork Catoctin Creek in Loudoun County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, BOD_5, Total Suspended Solids, Ammonia as N (June – November) Total Residual Chlorine, and *E. coli* bacteria.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Joan C. Crowther
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821